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Technical Report:

Analysis of Coast Funds' Economic Development Funding

Retrospective Economic Impact (2008-2024)

PREPARED FOR

Coast Funds

big river ANALYTICS

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Executive Summary

Key Findings

- From an initial funding envelope of $61 million, Coast Funds-supported projects leveraged an additional $193 million for a total of $254 million in deployed funds ($316 million in 2024 inflation-adjusted dollars). Over the 2008 to 2024 period, these projects initiated approximately $808 million in added value (GDP), $331 million in household income, and supported an average of 373 full-time equivalent (FTE) jobs every year.
- Over the program funding period, each dollar of project spending generated $2.57 in added value (GDP) and $1.07 in household income in British Columbia's economy. Furthermore, every $1 million in spending supported an average of 21 FTE jobs.
- Projects in the *arts, entertainment, recreation, accommodation, and food services* sector were a primary recipient of funding and ranked among the top five sectors in terms of impact for every economic indicator measured (GDP, employment, income, and output).
- In a case study, an interview with the management of a Coast Funds-supported corporation illustrates the scope and nature of economic impacts associated with current operations. Notably, 70% - 80% of the Crest Hotel's operational spending remains local, including about 32% flowing directly to households and into the local economy through labour costs.

This report provides an analysis of the economic impacts generated by First Nation-led projects supported by Coast Funds' Economic Development Fund (EDF) between 2008 and 2024. It describes how an initial $61 million funding envelope from the EDF acted as leverage for the projects to raise an additional $193 million, creating a total project budget of $254 million. The findings suggest that the fund served as a catalyst for economic activity, with the initial fund allocation being used to leverage a several-times larger overall budget, which then enabled substantial economic impacts within British Columbia's economy.

To quantify these economic impacts, this analysis uses a custom Input-Output (I-O) model calibrated for the provincial economy. The model combines project expenditure data from Coast Funds with macroeconomic data from Statistics Canada to trace how initial spending flows through the economy. This approach measures the direct impact of project spending as well as the secondary effects that stimulate supporting industries, bolster household incomes, and generate employment throughout the province. These economic impacts are broken down into direct (initial project spending), indirect (supply-chain activity as B.C. businesses buy from one another), and induced (household spending from income earned) effects, and presented by impacted industry sector, to provide a picture of the ways Coast Funds-supported projects contribute to economic activities in B.C.

The analysis reveals that initial project expenditures are magnified through provincial supply chains and household spending, creating a larger economic footprint than the original investment alone. Over 17 years, a nominal total of $254 million ($316 million in inflation-adjusted 2024 dollars) leveraged by Coast Funds-supported projects generated approximately $1.77 billion in gross output, $808 million in provincial GDP, and $331 million in household income. Further, these projects contributed to or sustained an average of 373 full-time equivalent (FTE) jobs every year. This means that, over the entire program period, every dollar of project spending generated an average of $5.61 in gross output, $2.57 in added value (GDP), and $1.07 in household income. Furthermore, every $1 million in spending supported an average of 21 FTE jobs.

Secondary effects are an important driver of the fund's economic impacts. Coast Funds-supported projects distinguish themselves from more geographically-concentrated economic entities, like Tofino's tourism sector (where indirect effects made up 18% of its total impact on GDP), by being dispersed across B.C. 's coast, and generating a higher proportion of their impact indirectly (66% of total GDP impact). This characteristic stems from the fund's project-based approach, which engages enterprises across various sectors with extensive supply chain requirements. This means that project spending sustains a wide array of industries and jobs beyond the immediately benefiting Indigenous communities and corporations.

Project funds primarily targeted a small selection of industries, with over 83% of expenditures spent on inputs (labour and products) from only five industry sectors. The *arts, entertainment, recreation, accommodation and food services* sector (23.0%) and *crop, aquaculture, and animal production* (22.3%) account for almost half of total funding, showing an emphasis on supporting tourism and food production. The resulting economic impacts, however, were

much more dispersed across industry sectors. In terms of added value (GDP), income, employment, and total output effects, 8 to 10 industry sectors accounted for an equivalent share (83%) of total economic impacts. The financial, insurance, real estate, and investment and trade, transportation and warehousing sectors stand out, generally accounting for large shares of total economic impacts.

By heavily targeting the industries relating to tourism and food manufacturing, CF-supported projects are bringing external wealth into the province, stimulating local industries and economic activity that would not otherwise occur. One way to understand some of the EDF economic impact is to draw on BC Stats' "basic income" framework where revenues that originate outside the province function as a source of "basic income" for the regional economy.[1] Basic income, analogous to revenue generated by export industries (for example, exporting timber outside the province), brings new money into the local economy and serves as an engine for economic activity. Basic income contrasts with "non-basic" income, which primarily recirculates existing local wealth, e.g., local retail serving residents. The contribution to basic income is further amplified by the nature of funds, since about $77 million of the total $254 million came from applicants' contributions, often derived from Nation governments' own-source revenues from economic development entities, settlement agreements, and other major agreements. [2]

In conclusion, this report provides evidence that Coast Funds-supported projects represent a source of economic growth for British Columbia. By presenting the economic value already generated, by estimating future potential impacts, and identifying where future funding could yield increasing effects, the analysis equips Coast Funds and its partners with an evidence base for strategic decision-making and renewed investment.

[1] See for example, (Horne, G., 2009) and (Local Area Economic Profiles, BC Stats, July 2025).
[2] Source: Coast Funds.

Terminology

Economic Framework:

- Input-Output model (I-O): The economic and mathematical framework used in this report to analyze the economic impacts resulting from project expenditures, considering direct, indirect, and induced effects.
- Symmetric Input Output Tables (SIOTs): Tables from Statistics Canada that collect all supply and demand transactions between economic sectors in British Columbia. SIOTs are fundamental to the I-O methodology.
- Input-Output Industry Classifications (IOIC): Statistics Canada's classifications for partitioning the economy into distinct economic sectors.
- Households: refers to "economic households", meaning private consumers considered as a unit contributing to the economy. By design, our I-O modelling treats households as a sector of the economy that is linked to all other sections via consumer consumption and wages for a more accurate representation.

Economic Indicators:

- Gross Output (Output): The total dollar value of goods and services produced by industries in the economy, including both intermediate goods (those used as inputs in the production of other goods and services) and final goods (those purchased for final consumption). Impacts measured through the lens of gross output should be interpreted with caution as gross output includes the value of intermediate inputs used in production and can thus count certain goods and services twice—once as inputs and again as final products.
- Added Value: measures the net contribution of each industry to the economy. It is calculated as the difference between gross output and the cost of intermediate inputs; i.e., the value of what an industry produces minus the cost of its production inputs. Finally, the province's Gross Domestic Product (GDP) is obtained by summing the added value from all industries in the economy.
- Household Income: Income earned by households from economic activity, including wages, mixed income (e.g., from self-employment), and government transfers.
- Employment: The total number of jobs sustained by economic activity; measured in Full-Time Equivalent units (FTEs) to include full-time, part-time, and seasonal jobs.

Economic Effects:

- Economic Effects: The measurement of economic activity quantifying the projects' impact on the British Columbia economy, viewed through the four economic indicators.
- Economic Multipliers (Multipliers): A measure of the economic effect created per dollar of expenditure in a specific industry, reflecting the broader conditions of the provincial economy. Multipliers are normalized measures (effect per dollar), meaning they are independent of the specific expenditure profile of a project, but reflect the broader conditions of the provincial economy as perceived by each industry.
- Nominal Effects: The face-value of economic impacts, measured in dollars or FTEs. This differs from an "economic multiplier", which measures the size of effects normalized per dollar spent.

  For example: industry *X* has an added value multiplier of $12.5 (i.e., each dollar targeting industry *X* contributes $12.5 to the province's GDP). While a $12.5 multiplier is considered large, if industry *X* is targeted with only $1,000 of expenses, the nominal effect on GDP of $12,500 is considered small at the provincial level.
- Types of Effects: The economic effects, either nominal or multiplier, can be broken down into three non-overlapping components:
  - Direct: resulting from projects' operational purchases and the transactions of the targeted industries to secure their own inputs (excludes households).
  - Indirect: effects from industry-to-industry purchases further upstream in the supply chain (excludes households).
  - Induced: household-driven effects resulting from increased income and spending; both directly and indirectly.

1.0 Introduction

1.1 Context

The Great Bear Rainforest and Haida Gwaii stand among the planet's most biologically rich coastal temperate rainforests, and their continued vitality depends on the stewardship of the First Nations who have lived with—and drawn strength from—these territories since time immemorial. Recognising that healthy ecosystems and thriving communities are intertwined, Coast Funds (CF) was established to support First Nation-led economic development while safeguarding cultural and environmental values for generations to come.

Between 2008 and 2024, CF administered a $61 million Economic Development Fund (EDF) created as an outcome of the Great Bear Rainforest Agreement (2006). Over 17 years, the EDF served as a source of economic stimulus in its own right, while also acting as a leverage tool for supported projects. This leverage helped projects to secure an additional $193 million, bringing the total nominal funding to $254 million (corresponding to $316 million in inflation-adjusted 2024 dollars) and thus amplifying the economic impact.[3] A significant portion (approximately $77 million) of the $193 million was contributed directly by the applicants, often utilizing Nation governments' own-source revenues from economic development entities, settlement agreements, and other major agreements.[4] Across twenty-seven First Nations, this capital has supported business launches and acquisitions, growth of economic development corporations, construction of strategic infrastructure, and collaborative regional initiatives stretching from the North Coast to northern Vancouver Island.

This report delivers an economic impact assessment of the projects supported by the EDF. It treats the $316 million as a collective portfolio rather than a collection of discrete projects, honouring each Nation's data-sovereignty preferences by presenting only aggregated results. Using public economic and census datasets in combination with CF's project records, the analysis applies a custom Input–Output (I-O) model calibrated to a provincial-level analysis. Moreover, drawing on an interview conducted with management from one of the supported

[3] Although the fund is often cited as a $60 million investment over a 15-year span, the Economic Development Fund actually administered approximately $61 million over 17 years. Including leveraged contributions, total project expenditures reached around $254 million. When adjusted to 2024 dollars, this amounts to a total economic funding envelope of $316 million, which forms the basis of this analysis. Unless otherwise noted, all references to Coast Funds-supported project expenditures refer to the inflation-adjusted total of $316 million.

[4] Source: Coast Funds.

projects (Crest Hotel), the case study in Section 4 provides granular evidence of the EDF's impact on tourism and local economies in B.C.

The report equips CF, First Nations, and their partners with an evidence base for strategic decision-making, policy engagement, and capitalisation of future First Nation-led economic development in the Great Bear Rainforest and Haida Gwaii.

1.2 Project Objectives

CF sought an assessment that captures the impacts of its EDF between 2008 and 2024. We integrated CF-supported projects with publicly available economic and census information to quantify how past expenditures have affected economic activities in British Columbia. Our analysis includes the $61 million of the EDF, as well as an associated $193 million in additional leveraged funds. This retrospective analysis estimates direct, indirect, and induced effects on outputs, added value, household income, and employment. Results are presented for the province as a whole and broken down by major sectors such as forestry, aquaculture, and manufacturing.

2.0 Data, Methodology, and Analytical Framework

2.1 Data Landscape

2.1.1 Data Sources Inventory

This analysis integrates two primary categories of information: project-specific financial data, which represent the economic stimulus, and broad economic datasets, which describe the structure of the provincial economy. The project expenditure data are analyzed within a provincial Input-Output (I-O) model and serve as the primary input that drives the model. This approach allows us to trace how initial expenditures flow through the economy, generating subsequent rounds of economic activity. The principal data sources underpinning this analysis are listed in Table 2.1.1. A thorough audit of the CF expenditure data was conducted with CF staff to reconcile minor gaps and ensure data consistency across the 17-year period.

Table 2.1.1: Data Sources

Data Type	Data Source
Provincial Input-Output tables	Statistics Canada, Supply and Use tables, 2008 – 2021
Employment data and household wages	Statistics Canada, Census of the Population, 2021, LabourForce Survey, 2019 – 2024
Expenditure data	Coast Funds administrative dataset, project files
Price data	Bank of Canada, Consumer Price Index, 2008 – 2024
Concordances between IOIC and NAICS industry classifications	Big River's custom concordance tables

2.1.2 Data Governance

This analysis was conducted in strict adherence to principles of Indigenous Data Sovereignty. The project expenditure data and associated well-being indicators are the sovereign property

of the participating First Nations. Recognizing this, a core principle of this assessment is the commitment to protecting the confidentiality and strategic interests of each Nation and their respective enterprises.

To honour this commitment, all findings are presented exclusively at an aggregated, provincial level. This approach ensures that data specific to any single Nation, community, or business cannot be identified or reverse-engineered from the report's findings. This governance framework was established in partnership with CF to ensure the analysis serves the collective interests of all participating Nations while fully respecting their data ownership and sovereignty.

2.2 Provincial-Level Input-Output Model

Using British Columbia as the principal unit of analysis serves three practical and strategic purposes. First, it aligns the results with the scale of policy and funding decisions, ensuring the findings are relevant to provincial ministries, Crown agencies, and philanthropic donors. Second, it leverages the most reliable available data, as Statistics Canada provides more frequent and detailed series at the provincial level than for sub-provincial regions. Local series for remote coastal areas are often suppressed or come with wide confidence intervals that would undermine the credibility of any modelled results. Third, the province-wide view captures the aggregate footprint of the entire portfolio while protecting Indigenous data sovereignty by not exposing Nation-level figures.

2.3 Analysis Design

The analysis in Section 3 quantifies expenditures and economic impacts of the more than 200 projects supported through the EDF between 2008 and 2024. The core of the analysis involves allocating all project expenditures to their respective Input-Output Industry Classification (IOIC) sectors for each year of activity. To ensure a consistent and comparable assessment across the 17-year timeframe, all recorded expenditure data are adjusted for inflation and expressed in constant 2024 dollars. The inflation-adjusted economic impacts of the expenditure profile are then analyzed through the provincial Input-Output model by:

1. Calculating the direct, indirect, and induced economic effects.
2. Disaggregating these effects by the impacted economic industries.

2.4 Limitations & Mitigations

Several inherent limitations and modelling assumptions shape the scope of this analysis. While the provincial Input-Output (I-O) model uses an established framework for assessing economic impacts, the following caveats should be considered:

- **Data Availability:** Annual SIOTs were unavailable for 8 of the 17 years in the analysis. In these cases, data from the closest available years were used. While economic structures generally change slowly, this approach means the model may not fully capture significant and sudden shifts in industry linkages.
- **Provincial Aggregation:** While this scale aligns with high-level policy and funding decisions, the provincial-level aggregation smooths over the uneven distribution of benefits along the coast and may not fully reflect supply chains in remote regions. For instance, this blends impacts from high-activity hubs like Prince Rupert with those from smaller communities in the Great Bear Rainforest and Haida Gwaii.
- **Supply-Chain Leakage:** The model assumes that all spending from indirect and induced effects remains within BC. In reality, some of this spending "leaks" out of the provincial economy when goods, services, or labour are sourced from other provinces or internationally, meaning that induced effects could be slightly overstated.
- **Exclusion of Non-Operational Expenditures:** Following standard practice, the I-O analysis excludes savings, investments, and debt amortization from the expenditures put through the model as the economic impact of these funds is realized only when they are converted into operational spending in the future. The model focuses exclusively on expenditures categorized by industry (IOIC system), not by specific commodities (IOCC system).
- **Project-to-Industry Matching Simplification:** This analysis estimates the economic impacts of over 200 projects supported by the EDF between 2008 and 2024. Due to the large volume it was not feasible to precisely match every dollar of expenditure to its specific targeted industry. Instead, each project was assigned to a single main targeted industry for the I-O model. We expect that part of the inaccuracies introduced by this generalized matching are mitigated through averaging effects due to the large number of projects.
- **Timeline of Projects and Budget:** To establish each project's time span and the years in which expenditures were incurred, it was assumed that a project's total budget was evenly distributed between its launch year and its closing year.

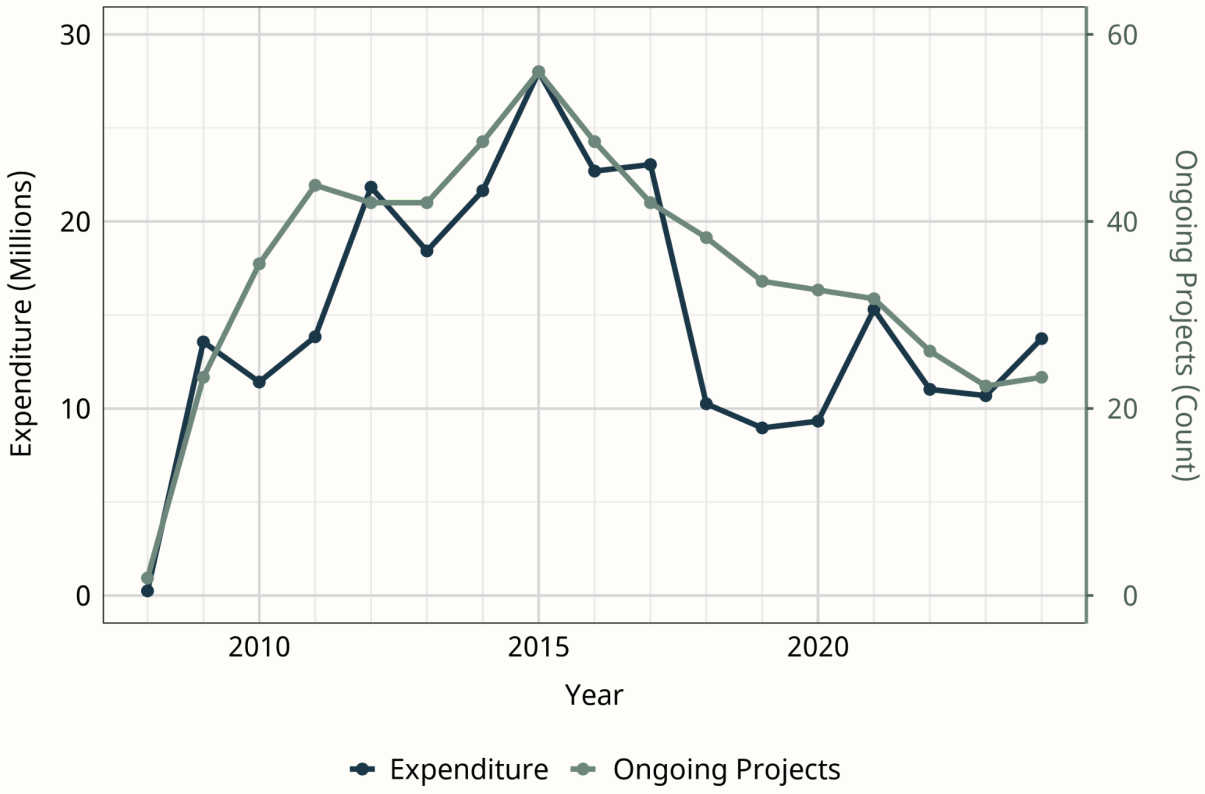
3.0 Economic Impacts

This section discusses the economic contributions of projects supported by the EDF, first by presenting the associated aggregated economic effects across all industry sectors, and then highlighting highly-impacted sectors for each economic indicator.

Total expenditures and the number of CF-supported projects between 2008 and 2024 reveal seemingly distinct temporal patterns as shown in Figure 3.1. To understand the evolution of expenditures and impacts over time, the 2008–2024 period is divided into three time blocks:

- Start-up period (2008 – 2011): Years characterized by lower initial engagement with growing project support as the CF launches its call for proposals through the EDF.
- Peak activity period (2012 – 2017): Years that saw a large number of supported projects and high expenditures.
- Late activity period (2018 – 2024): Continued support at a lower level than during the peak activity period.

Figure 3.1: Expenditure Levels and Number of Ongoing Projects, by Year



Source: Big River Analytics Calculations. CF Grants Data. Consumer Price Index, 2018 to 2024.

Table 3.1 displays budget patterns for each period, as well as annual average and total expenditures between 2008 and 2024. Total, inflation-adjusted project expenditures from 2008 to 2024 amounted to $316 million, corresponding to an annual average of $18.6 million.

Table 3.1: Average Annual Expenses of CF-Supported Projects during the Start-up Period, Peak Activity Period, and Late Activity Period, Adjusted for Inflation

Expenditures	2008 - 2011 Annual	2012 - 2017 Annual	2018 - 2024 Annual	Annual Average	Total
Project expenditures	$13.3M	$29.1M	$12.5M	$18.6M	$315.7M

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

3.1 Economic Effects by Type

For each economic indicator, we report direct, indirect, and induced economic effects to provide insight into the magnitude and transmission channels of the economic impacts. Tables 3.1.1 to 3.1.5 additionally display total and average annual effects for each indicator. Since income and employment are intrinsically linked to household behaviour, their impacts are reported via direct and indirect effects, and a separate 'induced' effect is not applicable.

Aggregated over the 17-year period, the operational spending of approximately $316 million generated approximately $808 million in added value, $331 million in household income, and $1.77 billion in gross output. Annually, this translates to an average of $48 million in added value, $19 million in income, and $104 million in gross output. Additionally, EDF-supported projects have contributed an average of 373 FTEs to the provincial workforce each year.[5]

The total effect-to-expenditure ratio—the effect per dollar of expenditure at current expenditure levels and profiles—demonstrates a considerable compounding effect. As an annual average, every dollar spent by CF projects fostered $2.57 in added value and $1.07 in household income throughout the provincial economy. When considering effects in terms of

[5] Aggregate employment impacts across the entire 2008 – 2024 period are not reported as a single cumulative figure, as the annual FTE data reflects ongoing employment as well as new distinct positions created over the 17 years. Aggregated impacts on employment across the 17-year period would overstate the amount of positions continuously supported.

gross output—counting total output as well as the value of any intermediate inputs—each dollar of expenditure leads to an effect of $5.61. Additionally, the projects support 21 FTEs per $1 million spent. The effects generated per dollar of expenditure are mostly constant over time, with a slightly higher value over the 2008 – 2011 start-up phase. Early-stage effects are especially pronounced for employment, partly because spending was concentrated in labour-intensive sectors like *crop, aquaculture, and animal production* (see Section 3.2).

Table 3.1.1: Added Value Effects, by Type and Period, Adjusted for Inflation

Added Value	2008 – 2011 Annual	2012 – 2017 Annual	2018 – 2024 Annual	Annual Average	Total
Direct	$9.2M	$21.8M	$9.7M	$13.9M	$235.5M
Indirect	$23.8M	$49.0M	$20.5M	$31.3M	$532.7M
Induced	$1.8M	$3.8M	$1.4M	$2.4M	$40.3M
Total	$34.9M	$74.6M	$31.7M	$47.6M	$808.5M
Total Effect-to-Expenditure Ratio	2.65	2.56	2.52	2.57	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.1.2: Income Effects, by Type and Period, Adjusted for Inflation

Income	2008 – 2011 Annual	2012 – 2017 Annual	2018 – 2024 Annual	Annual Average	Total
Direct	$4.7M	$9.9M	$4.9M	$6.6M	$112.6M
Indirect	$10.3M	$19.9M	$8.4M	$12.9M	$218.8M
Induced	—	—	—	—	—
Total	$15.1M	$29.7M	$13.2M	$19.5M	$331.4M
Total Effect-to-Expenditure Ratio	1.15	1.02	1.05	1.07	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.1.3: Gross Output Effects, by Type and Period, Adjusted for Inflation

Output	2008 – 2011 Annual	2012 – 2017 Annual	2018 – 2024 Annual	Annual Average	Total
Direct	$20.9M	$43.6M	$18.6M	$28.0M	$475.4M
Indirect	$43.0M	$88.6M	$36.4M	$56.4M	$958.5M
Induced	$15.1M	$29.7M	$13.2M	$19.5M	$331.4M
Total	$79.0M	$161.9M	$68.3M	$103.8M	$1,765.3M
Total Effect-to-Expenditure Ratio	5.99	5.89	5.76	5.61	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.1.4: Employment Effects, by Type and Period, Adjusted for Inflation

Employment	2008 – 2011 Annual	2012 – 2017 Annual	2018 – 2024 Annual	Annual Average
Direct	111	182	100	132
Indirect	218	373	143	242
Induced	—	—	—	—
Total	330	555	242	373
Total Effect-to-Expenditure Ratio (per $1M)	25.7	19.1	19.4	20.7

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.1.5: Average Annual Effects, by Type and Indicator, Inflation-Adjusted

Annual average	Added Value	Income	Output	Employment (FTEs)
Direct	$13.85M	$6.62M	$27.96M	132
Indirect	$31.33M	$12.87M	$56.38M	242
Induced	$2.36M	—	$19.49M	—
Total	$47.55M	$19.49M	$103.83M	373
Total Effect-to-Expenditure Ratio	2.57	1.07	5.61	20.7 (per $1M)

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada: Supply and Use tables, 2008-2021; Census of the Population, 2021; Labour Force Survey, 2019 to 2024; Consumer Price Index, 2008 to 2024.

The model shows that the influence of these projects extends beyond the immediate spending. Direct effects account for only 29% of added value between 2008 and 2024, meaning that over two-thirds of the impacts on GDP are secondary effects, as shown in Table 3.1.6. For income and employment, indirect effects account for approximately two-thirds (66% and 63%, respectively) of the total impact. For output, 54% of the impact comes from industry linkages (indirect effects) and 19% from household spending (induced effects). The results underscore the importance of considering these secondary effects to measure the provincial economic footprint of CF-supported projects.

Table 3.1.6: Strength of Each Type of Effect as a Percentage of the Total Effect, by Economic Indicator, Averaged over the 2008 – 2024 Period

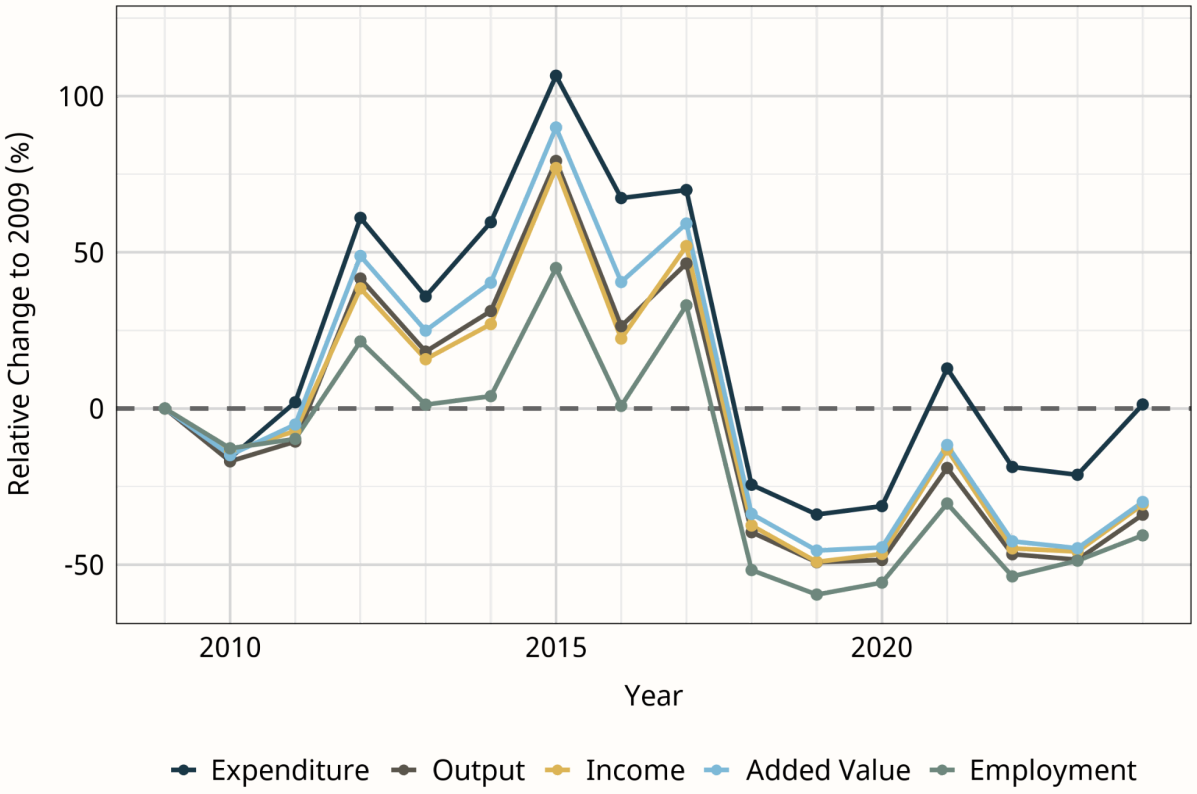
Annual average	Added Value	Income	Output	Employment (FTEs)
Direct	29%	34%	27%	37%
Indirect	66%	66%	54%	63%
Induced	5%	—	19%	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

To facilitate a more detailed comparison over time and between indicators, Figure 3.1.1 displays the relative change in expenditures and economic indicators with respect to a 2009 baseline (the first year of substantial expenditures and economic impacts). The economic indicators display a strong correlation with project expenditures, closely mirroring changes over time. Impacts grew throughout the start-up period and saw notable increases during the peak activity period (2012 – 2017), where added value, income, and output effects surpassed 2009 levels by 15–90%. During the late activity period (2018 – 2024), these economic impacts moderated and remained mostly below the 2009 baseline.

The employment indicator generally shows lower effects, relative to the 2009 baseline. Growth during the peak activity phase—throughout which expenditures and the other indicator effects grew by over 75%—remained between 0% and 50% for employment. The late activity period saw notable decreases with most years around 50% below 2009 employment effects.

Figure 3.1.1: Nominal Effect and Expenditure Relative Change (2009 Baseline)



Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2018 to 2024.

When comparing the economic impacts of CF-supported projects to Tofino's tourism industry, CF-supported projects proportionally show a noticeably larger indirect impact. In 2018, Tofino's tourism industry fostered $40M indirectly to B.C. 's GDP, representing 18% of its total economic impact.[6] In comparison, CF-supported projects fostered over $31 million indirectly to B.C. 's GDP, representing 66% of its total economic impact. The higher proportion of indirect economic impacts can be attributed to the diverse project-based nature of the EDF as well as a generally higher proportion of indirect effects among supported projects' target sectors. Therefore, although most CF projects target local Indigenous areas and communities, the indirect and induced effects move throughout the province's supply chain, stimulating economic activities across a broader population and geographic area than the initial distribution of funds may suggest.

[6] (Economic Impact of Tourism in Tofino, B.C., 2019)

3.2 Sector-Level Contributions

This section disaggregates the economic contributions to identify the key industry sectors impacted by CF-supported projects. By examining the top five sectors for total expenditures and for each economic indicator, we can trace how initial expenditures translate into broader economic activity. The findings highlight how funding patterns align with economic outcomes and reveal important inter-sector dynamics. Descriptions of each industry sector and the activities they comprise are presented in Appendix C.

Tables 3.2.1–3.2.5 display the five sectors with the highest shares of expenditures and impacts, measured by each economic indicator. This is displayed using average annual values within each distinct period, total values for the sector, sector-specific shares of total impacts or expenditures, and the cumulative share of impacts or expenditures across the top sectors.

Direct project expenditures reveal that CF-supported projects concentrate 82.7% of all project spending between 2008 and 2024 in five sectors. The largest share of expenditures is attributed to the *arts, entertainment, recreation, accommodation and food services* sector (23.0%), which includes tourism businesses, lodges and inns, and restaurants. This is closely followed by *crop, aquaculture, and animal production* (22.3%), such as farming, aquaculture, livestock, or other food production capabilities, reflecting an emphasis on supporting tourism and food production.

The strength of the economic effects generated by these expenditures largely follows the spending patterns, although with nuances that highlight the interconnectedness of the different industries which form the provincial economy.

When assessing contributions to added value (i.e., net contribution to GDP), the *financial, insurance, real estate, and investment* sector is the top contributing industry with 25.6% of total effects (see Table 3.2.2). This category, which includes activities like banking, financing for business acquisitions or purchasing property, ranks first despite only being the fourth-largest recipient of direct expenditures (11.3%). This dynamic signals the entrepreneurial nature of many CF-supported projects, namely those under the EDF, which rely heavily on financial and real estate services to launch and grow. The *trade, transportation, and warehousing* sector (14.3%)—covering commercial activities like freight movement, water taxis, or local retail—and *manufacturing* (13.9%)—such as value-added wood products or local food processing—also feature prominently, collectively accounting for over half of the total GDP contribution alongside the finance sector.

The patterns for income and employment effects are closely linked, showing how CF-supported projects impact job creation and household income growth. The *trade, transportation, and warehousing* sector is the top industry for income (20.6%) and employment effects (21.9%), as seen in Tables 3.2.3 and 3.2.5. Notably, the sector sustains 126 FTEs annually during the peak activity period, while receiving only about 6% of total expenditures. The *arts, entertainment, accommodation and food services* sector is also a top-three industry for income and employment generation, supporting up to 104 FTEs per year during the peak activity period.

The leading contributor to output is *households* (18.8%), as shown in Table 3.2.4, representing the value of labour supplied to other industries (as measured by wages and salary). This indicates that the direct and indirect creation of jobs is a foundational channel through which project expenditures move through the economy. This consequential impact on labour also highlights the relationship between the implementation of CF-supported projects and income on a household-level. Following *households*, the *manufacturing* (18.5%) and *financial, insurance, real estate, and investment* (17.3%) sectors are also major contributors to output.

Table 3.2.1: Annual Expenditures by Period and Total Expenditures, Top 5 Sectors

Expenditures	2008–2011 Annual	2012–2017 Annual	2018–2024 Annual	Sector Total	As Share of Total Effects	Cumulative Share
Arts, entertainment, recreation, accommodation and food services	$2.1M	$5.3M	$4.7M	$72.8M	23.0%	23.0%
crop, aquaculture, and animal production	$8.0M	$5.7M	$533K	$70.3M	22.3%	45.3%
Manufacturing	$410K	$7.4M	$1.1M	$54.2M	17.2%	62.5%
Financial, insurance, real estate, investment	$62K	$2.8M	$2.6M	$35.8M	11.3%	73.8%
Utilities	$1.0M	$3.3M	$556K	$28.1M	8.9%	82.7%

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.2.2: Annual Added Value Effects by Period and in Total, Top 5 Sectors

Added Value	2008–2011 Annual	2012–2017 Annual	2018–2024 Annual	Sector Total	As Share of Total Effects	Cumulative Share
Financial, insurance, real estate, investment	$8.0M	$18.6M	$9.1M	$207.3M	25.6%	25.6%
Trade, transportation and warehousing	$4.7M	$10.7M	$4.7M	$115.7M	14.3%	39.9%
Manufacturing	$4.7M	$11.1M	$3.8M	$112.1M	13.9%	53.8%
Arts, entertainment, recreation, accommodation and food services	$2.2M	$5.1M	$3.3M	$62.6M	7.7%	61.5%
Utilities	$1.7M	$4.4M	$1.1M	$40.6M	5.0%	66.6%

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.2.3: Annual Income Effects by Period and in Total, Top 5 Sectors

Income	2008–2011 Annual	2012–2017 Annual	2018–2024 Annual	Sector Total	As Share of Total Effects	Cumulative Share
Trade, transportation and warehousing	$2.8M	$6.2M	$2.9M	$68.4M	20.6%	20.6%
Manufacturing	$2.7M	$5.6M	$1.8M	$57.1M	17.2%	37.9%
Arts, entertainment, recreation, accommodation and food services	$1.5M	$3.2M	$2.1M	$40.1M	12.1%	50.0%
Financial, insurance, real estate, investment	$1.6M	$3.5M	$1.7M	$39.2M	11.8%	61.8%
Professional, scientific and technical services	$882K	$1.5M	$774K	$18.0M	5.4%	67.2%

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.2.4: Annual Output Effects by Period and in Total, Top 5 Sectors

Output	2008–2011 Annual	2012–2017 Annual	2018–2024 Annual	Sector Total	As Share of Total Effects	Cumulative Share
Households	$15.1M	$29.7M	$13.2M	$331.4M	18.77%	18.77%
Manufacturing	$13.4M	$32.7M	$11.1M	$327.2M	18.53%	37.31%
Financial, insurance, real estate, investment	$11.8M	$27.4M	$13.5M	$305.7M	17.32%	54.63%
Trade, transportation and warehousing	$8.0M	$18.8M	$8.2M	$202.3M	11.46%	66.09%
Arts, entertainment, recreation, accommodation and food services	$4.5M	$10.3M	$6.8M	$126.9M	7.19%	73.28%

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table 3.2.5: Annual Employment Effects by Period and Total Expenditures, Top 5 Sectors

Employment	2008–2011 Annual	2012–2017 Annual	2018–2024 Annual	Sector Total	As Share of Total Effects	Cumulative Share
Trade, transportation and warehousing	63	126	54	1391	21.9%	21.9%
Arts, entertainment, recreation, accommodation and food services	55	104	68	1323	20.9%	42.8%
Manufacturing	48	92	27	937	14.8%	57.5%
Financial, insurance, real estate, investment	21	43	23	500	7.9%	65.4%
crop, aquaculture, and animal production	51	30	4	413	6.5%	71.9%

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

An analysis across the four indicators shows that expenditures are concentrated in just a few industries. The top five sectors account for 83% of total spending and the top seven sectors account for 97% of total spending. By contrast, economic effects are spread across more sectors. Around 83% of impacts are captured by the top 8 sectors for gross output and employment, by 9 sectors for value added, and by 10 sectors for income. When looking at the industry sectors generating 97% of total impacts, this expands to 16 sectors for output, 17 for employment, and 18 for both value added and income. This diffusion of economic effects—relative to spending—displays how CF-supported projects stimulate additional industries and producers when sourcing intermediate inputs. The complete sectoral distribution of project expenditures and economic effects are broken down by annual and total values in Appendix B.

Further, although economic impacts are spread across more industries than the initial expenditures, the primary targeted sectors still generate notable economic impacts. For instance, the *arts, entertainment, recreation, accommodation, and food services* sector ranks among the top five for every economic indicator. This suggests that the sector, a key recipient of funding, is also a major contributor to GDP, employment, and income..

The analysis also highlights the enabling role of individual sectors whose economic impact outgrows their initial expenditure levels. For instance, the disproportional contribution of the financial, insurance, real estate, and investment sector to GDP points to the complex supply chains that support Indigenous-led businesses. It underscores the interconnectedness of sectors—specifically within tourism-related industries—and shows that the impact of the fund extends beyond the directly financed projects.

Finally, households play a central role in generating output effects, as the labour supplied by residents of the region is a key input for economic activities. This labour translates initial expenditures into impacts across multiple sectors. Employment generated by CF-funded projects therefore represents an important pathway through which economic impacts occur.

4.0 Case Study: Crest Hotel

The preceding analysis demonstrates the province-wide economic footprint of Coast Funds-supported projects. To anchor these broad findings, this case study examines the Gitxaała Nation's acquisition and enhancement of the Crest Hotel in Prince Rupert. This project is an example of the EDF's intended outcomes, showing how the funds' support promotes economic activity, which in turn can support cultural and social values within a community.

The Crest Hotel shows how funding can be a catalyst for development, yielding economic impacts alongside social and cultural benefits that extend beyond the balance sheet. The hotel drives local employment and revenues, showcasing the active role of Nation-owned businesses in strengthening supply chains, developing the workforce, and serving as a platform for cultural vitality.

The following insights are drawn from project data and an interview with the Crest Hotel's General Manager (held in September 2025), providing an on-the-ground perspective.

4.1 Project Details

In May 2023, Gitxaała Enterprises Corporation (GECO) acquired the Crest Hotel in Prince Rupert. Subsequently, several infrastructure upgrades were implemented, including the installation of a new heat pump and air conditioning system (HVAC) serving more than 80 rooms throughout the hotel. These upgrades were supported by approximately $2.3 million in Coast Funds development funding plus $248 thousand in leveraged funds.

Following its acquisition by the Gitxaała Nation, the Crest Hotel has embarked on a strategic path of investment and long-term growth and has harnessed the opportunities presented by the EDF to implement this vision. The installation of a modern HVAC system, adequate insulation, and other amenities was essential for adhering to health standards and enhancing guest experiences, especially when considering the exacerbated impacts of climate change in northern regions.

These upgrades are part of a broader GECO and Gitxaała Nation strategy to secure and expand their presence in the local economy, which also includes other projects in the Crest Hotel, such as new on-site water treatment facilities, renovated meeting spaces, and the

recent acquisition of the adjacent Chances Convention Centre. The acquisition expands the hotel's service offerings and mitigates business seasonality by creating a year-round regional center that offers convention spaces, accommodation, and catering. The Crest Hotel is an example of how EDF funds can contribute to economic activities and allow beneficiaries to further capitalize on these efforts in the long term. Overall, the investments help anchor the renovated Crest Hotel and its restaurant in the higher-end segment of Prince Rupert's tourism and restaurant industry.

By aiming to be a "premier, stand-out destination in B.C.", the Crest Hotel's strategy directly aligns with the "basic income" framework discussed in this report. The hotel attracts external revenue from corporate, government, and leisure travellers and thus adds capital to northern B.C.'s economy. By partnering with the local tourism board and other regional organizations, it creates compelling reasons for visitors to travel to and stay in northern BC and, in doing so, assumes a central role in the regional tourism sector.

4.2 Local Spending and Economic Impacts

The Crest Hotel is an important local employer and contributes directly to household income. The hotel maintains a staff of approximately 100 people (70 full-time, 20 part-time, and 10 seasonal) and engages an additional 2-to-10 contractors for major projects since the acquisition. Labour costs, representing about 32% of all operational expenditures, flow directly to households and into the local economy as these are re-spent on local goods and services (induced effects).

Other major costs are associated with renovation materials, restaurant supplies and ingredients, information technology systems, and technical services such as advertising and accounting. Overall, an estimated 70% to 80% of the total operational expenditures are spent locally, supporting a network of regional suppliers and service providers. In particular, when capital improvements are undertaken, construction materials are sourced from regional suppliers and labour is hired from surrounding communities, meaning that operation dollars recirculate within northern B.C. rather than leaking out of the provincial economy. This local procurement extends to restaurant and hotel supplies, and most technical services.

The Crest Hotel's operations and renovations thus create local secondary effects as initial spending is amplified through contractors procuring their own inputs as well as through household spending, thus creating the indirect and induced effects quantified in the provincial I-O model.

Since the acquisition, the hotel's operational strategy has led to steady growth in the number of rooms booked (Table 4.2.2.1), leading to a corresponding increase in revenue . Operational numbers from 2025 are on track to surpass all previous records, including those from prior to the acquisition. This successfully validates the Gitxaała Nation's venture of entering the tourism industry and contributing to the post-pandemic revitalization in northwest B.C.

Table 4.2.1: Number of Rooms Booked at the Crest Hotel, by Year

	2023	2024	2025
Rooms Booked	21,839*	23,331	25,000 (projected**)

Source: Interview conducted by Big River Analytics with Crest Hotel management.

*Rooms booked in 2023 are reported for 11 months, excluding April.

**Conservative projection based on 11,785 rooms booked from January to April 2025.

4.3 Workforce Development and Cultural Vitality

Beyond the immediate economic impacts, the hotel contributes to local workforce development. Facing a changing labour market with fewer experienced candidates compared to previous years, the management invests in training and workforce development, turning jobs into careers, building a skilled local workforce, and enhancing the region's human capital.

Under Gitxaała ownership, the Crest Hotel has also evolved into a platform for Indigenous value sharing and community building. The hotel incorporates and supports Indigenous events, such as the All Native Basketball Tournament, and has seen a corresponding increase in First Nations clientele. This creates a space where cultural celebration and commerce intersect, and directly contributes to three of Coast Funds' social well-being objectives: social empowerment, cultural vitality, and economic prosperity. Simultaneously, the support for Indigenous events has strengthened the Crest Hotel's customer numbers during the shoulder seasons.

Ultimately, the current management of the Crest Hotel aims to support long-term prosperity. Operations at the Crest Hotel are seen as a source of pride and economic self-determination that will provide benefits for the Gitxaała Nation and the surrounding region for generations to come. The Crest Hotel provides an example of Coast Funds' purpose and operations, showcasing that investments in Nation-owned enterprises can produce economic, social, and cultural returns that support a resilient economy.

5.0 Conclusion

The report examines the economic impacts of Coast Funds and the Indigenous-led projects supported by the Economic Development Fund (EDF) in British Columbia. The initial $61 million from the EDF acted as a catalyst for economic activities, serving as a direct source of funding and as “seed money” helping leverage an additional $193 million. This resulted in a total funding envelope of $254 million between 2008 and 2024 (approximately $316 million in 2024 inflation-adjusted dollars). This support for a variety of projects across B.C. 's coast initiated economic activities for a total of $808 million in added value, $331 million in household income, and $1.77 billion in gross output. Furthermore, the EDF funds supported 373 full-time equivalent jobs annually.

The analysis discusses some of the most supported and impactful sectors, such as *accommodation and food services*, and *crop, aquaculture, and animal production* through a "basic income" framework. These industries direct external monetary flows into the province, similar to export-oriented businesses, bringing new funds into the local economy rather than recirculating existing local funds. This capacity to bring in external revenues actively stimulates local industries and economic activity that would not otherwise occur.

The report further shows that a large share of the fund’s economic impact comes from secondary effects (indirect and induced), for instance, accounting for 66% of its total GDP impact. This proportion is notably higher than in more geographically concentrated economic drivers, indicating how the EDF’s project-based approach stimulates provincial supply chains.

Moreover, while project funding was highly concentrated—over 83% of all funding was directed to just five key sectors—the resulting economic impacts were more dispersed. For instance, ten sectors account for 83% of impacts in terms of household income. This illustrates that the investments in First Nation-led projects have stimulated a range of "enabling" sectors across the B.C. economy, which disperse economic activities past the initial expenditures.

Beyond pure economics, these investments have supported cultural and social initiatives and helped First Nations-owned businesses grow, contributing to long-term social cohesion and economic self-determination in the Great Bear Rainforest and Haida Gwaii.

Appendix A: Technical I-O Methodology

A.0 Notation and abbreviations:

Throughout this technical Appendix we use the following conventions on notation and abbreviations:

- Subscripts like i or j indicate the components of vectors and are used to denote industry sectors among the sectors making up the economy. For example, x_j represents the gross output produced by industry j and corresponds to the j^{th} entry of the vector of gross output x. Similarly, double indices denote entries of matrices and also denote industry sectors; for example, z_{ij} represents the monetary transaction from industry i to industry j and corresponds to the entry of the matrix where the i^{th} row and the j^{th} column intersect.

- An overbar, in quantities like $\overline{A}$, indicates that we are using quantities **closed under households**, i.e., that we are considering economic households as the $(n+1)^{th}$ industry in the economy—itself connected to all other industries via wages and household consumption. This is a key assumption embedded in our model to produce a more accurate depiction of the economy, and our notation reflects this. Therefore, an overbar in symbols such as $\overline{A}$ or $\overline{L}$ indicates that we are considering $j = 1, 2, ..., n, n+1$ industries. To avoid overcrowding the notation, the overbar is usually reserved for matrices, and the size of vectors is inferred from context to ensure matrix-vector products are compatible. An exception to this convention is the explicit overbar in the multipliers $\overline{m}_j$, as there exist commonly used multipliers in the literature that exclude households in their definitions. Our notation ensures there is no confusion.

- The symbol "Δ" is used to indicate a variation, or change. For example, Δf represents a change in final demand supplied to the economy. More specifically, Δf_j is the j^{th} entry of the vector Δf and represents the change in the final demand of industry j.

- Superscripts are used throughout. When a superscript is numeric, as in the case of $\overline{A}^2$, it indicates a power being raised.
  The superscripts dir, $indir$, and $induc$ are used to distinguish between direct, indirect, and induced components/effects.

- Some sections make discretionary use of the *hat* notation, such as $\widehat{p}$ or $\widehat{\Delta x}$, to emphasize that we are working with a vector. This notation is used specifically in contexts involving linear algebra operations and helps distinguish between a vector-matrix multiplication and a scalar-matrix multiplication. For example, $\overline{A}p$ and $\overline{A} \cdot \widehat{p}$ are two equivalent ways to write the same matrix-vector product; however, the latter avoids mistakenly interpreting p as a scalar in the product.

A.1 Input-Output modelling fundamentals

Fundamental I-O relations

The fundamentals of Input-Output modelling and the linear algebra formulation can be found in (Miller, R. E., & Blair, P. D., 2009); we provide below a summary containing the calculations more relevant to our analysis.

Consider an economy made of $n + 1$ industries that interact with each other via offer and demand. Each industry $j = 1, ..., n, n + 1$ produces x_j dollars worth of final output and the quantities z_{ij} for $i, j = 1, ..., n, n + 1$ denote the dollar amount of intermediate goods and services supplied by i to j so that j is capable to produce its own output to meet its final demand f_j.

Importantly, our Input-Output model is *closed under households*, meaning that the $(n + 1)^{th}$ industry represents the private *households* sector—which consists of consumers that interact with the other industries via labour and consumption.

The fundamental relation of supply and demand is then written as

$$x_i = z_{i1} + z_{i2} + ... + z_{ij} + ... + z_{in} + z_{i,n+1} + f_i \text{ for every } i = 1, ..., n, n + 1$$

Which simply states that the final output x_i produced by industry i amounts to the total intermediate output it supplies to the $n + 1$ industries—that use it to produce their own output—, plus the final demand f_i that the markets demand from i.

If we further define the technical coefficients as $a_{ij} = z_{ij}/x_j$, these provide the dollar amount of intermediate input supplied by i that j needs in order to produce \$1 worth of its own output.

Denoting by $\overline{A} = \{a_{ij}\}$ the $(n + 1) \times (n + 1)$ matrix of technical coefficients—called the technical matrix—, we obtain a revised form of the fundamental supply-demand relation which can be written in matrix-vector form as

$$x = \overline{A}x + f$$

$$(I - \overline{A})\, x = f$$

The latter states that there is a direct linear relation between the matrix $(I - \overline{A})$, the vector of outputs x and the vector of final demands f. In other words, if $\overline{A}$ and x are known, we can deduce the final demand that required such outputs. Conversely, if the final demand across all industries/sectors f is known, one can solve a linear system to recover the final outputs x that satisfied the demand.

Remarkably, because this is a linear model, it is trivial to analyze how final demand reacts to a change in output production Δx (assuming the economy remains at equilibrium). Conversely, we can assess how a change in final demand Δf triggers a change in output that ripples through the industries. The relation expressing this response to change is

$$(I - \overline{A})\, \Delta x = \Delta f$$

which provides the primary tool used for our analysis. Specifically, it provides the formulation to analyze how the economy responds to a change in final demand Δf generated by the operations of CF-supported projects. To that objective, we invert the matrix $(I - \overline{A})$ to solve the linear systems via

$$x = (I - \overline{A})^{-1} f \quad \text{or} \quad \Delta x = (I - \overline{A})^{-1} \Delta f$$

In these final relations between output and final demand, the matrix $(I - \overline{A})^{-1}$ is known as the Leontief inverse; it is denoted by $\overline{L}$ and has entries $\overline{L} = \{\bar{l}_{i,j}\}$ for all $i, j = 1, \ldots, n, n+1$.

Rounds of spending

Although the precise reasons extend beyond the scope of this appendix, an important consequence of the peculiar structure of the technical matrix $\overline{A}$ is that $\overline{L} = (I - \overline{A})^{-1}$ admits a converging geometric power series expansion $\overline{L} = (I - \overline{A})^{-1} = I + \overline{A} + \overline{A}^2 + \overline{A}^3 + \ldots$ which provides an interesting interpretation when used as

$$\Delta x = (I + \overline{A} + \overline{A}^2 + \overline{A}^3 + \ldots)\, \Delta f$$
$$\Delta x = I\, \Delta f + \overline{A}\, \Delta f + \overline{A}^2 \Delta f + \overline{A}^3 \Delta f + \ldots$$

Each term in the right-hand side represents the contribution to Δx of each "round of spending":

i. The first term $I\, \Delta f = \Delta f$ represents the trivial effect of a change in demand, i.e., the output has to increase by the amount demanded by the markets. This can be referred to as the 0^{th} round of inter-industry spending.
ii. The term $\overline{A}\, \Delta f$ accounts for the intermediate purchases that the targeted industries need to secure in order to produce their output; i.e., this term measures how

economic circulation spills over to secondary industries to satisfy the needs of the primary industries.

iii. The term $\overline{A}^2 \Delta f$ quantifies the spillover to tertiary industries, i.e., it accounts for the economic circulation stemming from secondary industries securing their own inputs from other industries.

iv. Subsequent terms are interpreted in a similar way, as economic ripples further up the supply chain that arise when industries purchase their own inputs.

Discriminating between "rounds of spending" gives rise to the distinction between direct and indirect economic flows. Next, we provide a specific definition for our interpretation of direct, indirect, and induced effects.

Let us use the distinctive *hat* notation for vectors and write $\widehat{\Delta f} = (\Delta f_1, \Delta f_2, \ldots, \Delta f_n, \Delta f_{n+1})$ for the vector of change in final demand; each entry corresponds to the change in final demand to a specific industry. Moreover let us decompose the vector as

$$\widehat{\Delta f} = \widehat{\Delta f_I} + \widehat{\Delta f_H}$$

Where we use the subscripts I for *industry* and H for *households*. Specifically, their respective definitions:

- $\widehat{\Delta f_I} = (\Delta f_1, \Delta f_2, \ldots, \Delta f_n, 0)$ is the vector containing all values Δf_j for industries j other than households, and with the household entry— $(n+1)^{\text{th}}$ entry—set to zero.
- $\widehat{\Delta f_H} = (0, 0, \ldots, 0, \Delta f_{n+1})$ is the row vector with zeros in all non-household positions and the household value Δf_{n+1} in the final entry.

It follows that

$$\begin{aligned}
\widehat{\Delta x} &= \overline{L} \cdot \widehat{\Delta f} = \overline{L} \cdot (\widehat{\Delta f_I} + \widehat{\Delta f_H}) = \overline{L} \cdot \widehat{\Delta f_I} + \overline{L} \cdot \widehat{\Delta f_H} \\
&= ((I + \overline{A}) + [\overline{L} - (I + \overline{A})]) \cdot \widehat{\Delta f_I} + \overline{L} \cdot \widehat{\Delta f_H} \\
&= (I + \overline{A}) \cdot \widehat{\Delta f_I} + [\overline{L} - (I + \overline{A})] \cdot \widehat{\Delta f_I} + \overline{L} \cdot \widehat{\Delta f_H} \\
&= \widehat{\Delta x}^{dir} + \widehat{\Delta x}^{indir} + \widehat{\Delta x}^{induc}
\end{aligned}$$

In other words, we identify:

- $\widehat{\Delta x}^{dir} = (I + \overline{A}) \cdot \widehat{\Delta f_I}$ to be the vector of size $(n+1)$ with the **direct** component of the change in output $\widehat{\Delta x}$. This includes the 0^{th} and 1^{st} round of inter-industry spending but excludes all effects involving households.
- $\widehat{\Delta x}^{indir} = [\overline{L} - (I + \overline{A})] \cdot \widehat{\Delta f_I} = (\overline{A}^2 + \overline{A}^3 + \overline{A}^3 + \ldots) \cdot \widehat{\Delta f_I}$ being the **indirect** component of the change in output $\widehat{\Delta x}$—this being a vector of size $(n+1)$. This term includes the

2nd, 3rd, and all subsequent rounds of spending but, again, disregards all changes in output produced at the level of households.

- $\widehat{\Delta x}^{induc} = \bar{L} \cdot \widehat{\Delta f_H}$ being the **induced** component of the change in output. Because of the simple nature of $\widehat{\Delta f_H}$, we have that $\bar{L} \cdot \widehat{\Delta f_H} = (\bar{l}_{1,n+1}, \bar{l}_{2,n+1}, \ldots, \bar{l}_{n+1,n+1})$ which is the vector of size $(n+1)$ corresponding to the last column of the Leontief inverse $\bar{L}$. The induced term $\widehat{\Delta x}^{induc}$ captures all spending rounds—both direct, and indirect—that involve households.

This section presented the basic mechanism to analyze the response of the economy in terms of gross output x, but this mechanism can equally be applied to measure the effects in terms of added value, employment, and household income. The following sections provide information on how to translate the output estimates to other indicators.

A.2 Economic multipliers, definitions and interpretation:

Economic multipliers are established tools for assessing the dynamism of industry sectors within an economy. They quantify how an industry responds to an exogenous change in its final demand (i.e., purchases coming from outside the industrial sector). A change in consumption stimulates production in the targeted sector and, through inter-industry linkages, generates ripple effects across other industries. Multipliers capture not only the direct effects of such changes but also the indirect and induced effects that arise through supply chain relationships and household spending. By measuring the extent to which an industry can stimulate others, multipliers help identify sectors that exert significant influence on the broader economy, as well as those that remain relatively isolated.

There are different types of multipliers, each offering a distinct insight into the economic contribution that CF-supported projects generate in the province. Specifically, the indicators used in this report pertain to gross output,added value (GDP), household income, and employment. Their definitions and more specific interpretations are provided below.

Output multipliers: The output multiplier for a given sector j is the total increase in gross production output throughout the economy from a one-dollar increase in final demand Δf_j = \$1 for that sector's product.

$$\overline{m(o)}_j = \sum_{i=1}^{n+1} \bar{l}_{ij} \; / \Delta f_j = \sum_{i=1}^{n+1} \bar{l}_{ij}$$

Income multipliers: Aims to capture the total change in household income generated by a unit change in final demand from sector j. Let $a_{n+1,i}$ be the income generated by households from sector i per dollar worth of output of sector i; i.e., the salary paid by industry i to households that is required by i to produce one dollar worth of its output.
Income multipliers take a special place among all other multipliers presented here, as they can be expressed in two different ways when working with a model closed under households. Both ways are equally valid and differ only by a slight change in their economic interpretation. Namely, these are:

$$\text{Total Income Multiplier: } \overline{m}(h)_j = \sum_{i=1}^{n+1} a_{n+1,i}\bar{l}_{ij} \ / \Delta f_j = \sum_{i=1}^{n+1} a_{n+1,i}\bar{l}_{ij}$$

$$\text{Type II Income Multiplier: } \overline{m}(h)_j^{II} = \sum_{i=1}^{n+1} a_{n+1,i}\bar{l}_{ij} \ / a_{n+1,j} = \overline{m}(h)_j / a_{n+1,j}$$

- The Total Income Multiplier of the provincial economy $\overline{m}(h)_j$ indicates the income cumulated by households across all sectors when a change of Δf_j = \$1 is seen in the final demand of sector j.
- The Type II provincial Income Multiplier, $\overline{m}(h)_j^{II}$, accounts for the fact that when a change in final demand Δf_j = \$1 is triggered in sector j, the resulting ripples in income across the economy are measured relative to the wages paid by sector j to meet that demand—specifically, as a share of $a_{n+1,j}$—rather than as a share of the nominal demand change itself Δf_j = 1\$. In other words, Type II multipliers are essentially a scaled-up version of the total income multipliers, summarized by the scaling relation $\overline{m}(h)_j^{II} = \overline{m}(h)_j / a_{n+1,j}$.

Type II income multipliers are often used in the applied literature and bear an insightful interpretation when analyzed by themselves. However, their interpretation does not extend to other economic indicators, such as employment and added value. Hence, to maintain consistency across our report and to prevent confusion, we choose to work with the Total Income Multipliers $\overline{m}(h)_j$ in this report. See (Section 6.2.2, Miller & Blair, 2009) for a deeper discussion on the contrasts between these two variants.

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Employment multipliers: The employment multiplier of a sector j corresponds to the increase in jobs created by one-dollar increase in final demand Δf_j= \$1 for that sector's products.

Let e_i be the number of jobs needed per dollar worth of output for industry i (usually measured in Full-Time Equivalent employment (FTEs) per dollar). Specifically, for each industry i, we define $e_i = E_i / x_i$ where E_i is the number of jobs generated by i at the provincial level, and x_i is the gross output of i at the provincial level.

Then, the employment multiplier for sector j is given by

$$\overline{m}(e)_j = \sum_{i=1}^{n+1} e_i \bar{l}_{ij} / \Delta f_j = \sum_{i=1}^{n+1} e_i \bar{l}_{ij}$$

Added value multipliers (GDP multipliers): Aims to capture the change in added value brought by industry j over its intermediate inputs as generated by a unit change in final demand Δf_j=$1 to sector j.

Let v_i be the added value generated per unit of output of industry i. The added value multipliers are given then by

$$\overline{m}(v)_j = \sum_{i=1}^{n+1} v_i \bar{l}_{ij} / \Delta f_j = \sum_{i=1}^{n+1} v_i \bar{l}_{ij}$$

Note: Added value and GDP are connected via the well-known formula

GDP = sum of added value over all sectors.

By analogy, the added value multipliers $\overline{m}(v)_j$ are often referred to as “GDP multipliers” in Input-Output analysis.

Appendix B: Detailed Expenditure and Effects by Sector

Table B.1: Heatmap of CF-funded Projects Expenses, by Sector and Year, in Millions of 2024 dollars

Industry Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Sector Total	% of Total	Cumul. %
arts, entertainment, recreation, accommodation and food services	0.0	0.8	3.7	3.8	5.0	4.5	1.3	4.1	4.5	12.3	1.0	1.8	4.0	5.4	5.7	7.9	7.1	72.8	23.05%	23.05%
crop, aquaculture, and animal production	0.2	16.4	9.1	6.5	6.4	2.9	2.6	10.2	9.9	2.4	0.1	0.7	0.6	0.6	0.6	0.6	0.6	70.3	22.27%	45.31%
manufacturing	0.0	0.1	0.1	1.5	10.1	10.2	11.0	9.8	1.9	1.7	1.7	2.2	0.8	0.8	0.6	0.3	1.7	54.2	17.17%	62.48%
financial, insurance, real estate, investment	0.0	0.0	0.0	0.2	0.2	0.2	6.2	3.3	3.3	3.7	4.4	3.8	3.8	2.9	2.6	0.5	0.5	35.8	11.33%	73.81%
utilities	0.0	0.1	0.1	3.9	3.7	3.7	4.0	4.3	4.0	0.4	0.3	0.3	0.3	0.8	0.7	0.7	0.7	28.1	8.91%	82.71%
other aboriginal government services (excl. health and education)	0.0	0.8	1.8	1.9	3.0	2.5	2.6	3.0	2.0	1.6	1.9	1.3	0.9	0.9	0.9	0.7	1.1	26.8	8.49%	91.21%
trade, transportation and warehousing	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.2	2.4	5.9	1.9	0.3	0.4	3.8	0.6	0.3	1.6	18.9	5.98%	97.19%
construction	0.0	0.2	0.3	0.3	0.2	0.0	0.0	0.1	0.8	0.6	0.7	0.1	0.0	0.0	0.0	0.0	0.0	3.4	1.06%	98.25%
government health services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.64%	98.90%
forestry and logging	0.0	0.3	0.3	0.4	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.40%	99.30%
Wild fishing, hunting and trapping	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.7	0.21%	99.51%
other services (except public administration)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.13%	99.64%
admin & support, waste management & remediation services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.13%	99.77%
educational services	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.12%	99.88%
support activities for agriculture and forestry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.09%	99.98%
professional, scientific and technical services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.02%	100.00%
mining, quarrying, and oil and gas extraction	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
information and cultural industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
health care and social assistance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
government education services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
non-municipal government services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
other municipal government services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
non-profit institutions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
Yearly Total	0.3	18.7	15.6	18.4	28.8	24.3	28.3	36.2	28.8	28.6	12.4	10.6	10.9	17.4	11.8	11.0	13.7	315.7	—	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table B.2: Heatmap of Gross Output Effects, by Sector and Year, in Millions of 2024 dollars

Industry Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Sector Total	% of Total	Cumul. %
households	0.4	21.4	18.5	19.9	29.7	24.8	27.2	37.9	26.2	32.6	13.4	10.9	11.5	18.6	11.8	11.6	14.9	331.4	18.77%	18.77%
manufacturing	0.3	19.9	15.9	17.7	36.1	31.6	34.0	43.4	23.6	27.3	11.6	10.7	9.2	13.8	9.6	9.1	13.4	327.2	18.53%	37.31%
financial, insurance, real estate, investment	0.3	16.6	14.4	15.6	24.2	20.3	29.2	34.4	25.2	31.0	15.7	13.0	13.8	17.9	12.2	9.7	12.2	305.7	17.32%	54.63%
trade, transportation and warehousing	0.2	11.7	9.8	10.3	17.7	14.8	16.2	23.4	17.3	23.7	9.1	6.4	6.3	13.0	6.7	6.3	9.5	202.3	11.46%	66.09%
arts, entertainment, recreation, accommodation and food services	0.1	4.2	6.7	6.9	9.9	8.6	5.7	10.3	9.1	18.0	3.3	3.8	5.5	8.1	7.5	9.8	9.2	126.9	7.19%	73.28%
crop, aquaculture, and animal production	0.3	20.9	12.0	9.0	9.6	5.3	5.0	14.4	12.4	4.9	0.9	1.5	1.4	1.8	1.4	1.4	1.7	103.8	5.88%	79.16%
utilities	0.0	1.7	1.4	5.2	5.8	5.5	5.9	6.9	6.7	2.5	1.2	1.1	1.0	1.8	1.4	1.4	1.6	51.1	2.90%	82.05%
professional, scientific and technical services	0.1	2.9	2.6	2.7	4.0	3.3	3.8	5.2	3.9	4.5	2.0	1.7	1.7	2.7	1.7	1.6	2.1	46.4	2.63%	84.68%
information and cultural industries	0.0	2.6	2.3	2.4	3.4	2.9	3.3	4.5	3.3	4.2	1.7	1.4	1.5	2.3	1.5	1.4	1.8	40.2	2.28%	86.96%
admin & support, waste management & remediation services	0.0	1.8	1.6	1.7	3.1	2.6	3.0	4.0	3.0	3.7	1.7	1.5	1.5	2.1	1.4	1.4	2.0	36.0	2.04%	89.00%
forestry and logging	0.0	1.9	1.6	1.8	3.3	2.9	2.9	3.7	2.0	2.4	1.0	0.9	0.8	1.3	0.9	0.8	1.2	29.5	1.67%	90.67%
mining, quarrying, and oil and gas extraction	0.0	1.9	1.5	1.8	3.8	3.3	3.5	3.1	1.7	2.1	0.7	0.7	0.6	1.0	0.7	0.7	1.0	28.3	1.60%	92.27%
other aboriginal government services (excl. health and education)	0.0	0.8	1.8	1.9	3.0	2.5	2.6	3.0	2.0	1.6	1.9	1.3	0.9	0.9	0.9	0.7	1.1	26.8	1.52%	93.79%
construction	0.0	1.5	1.4	1.7	1.9	1.5	1.7	2.5	2.4	2.2	1.5	0.8	0.7	1.0	0.7	0.6	0.8	22.7	1.28%	95.07%
other services (except public administration)	0.0	1.3	1.1	1.2	1.8	1.5	1.6	2.2	1.5	1.8	0.9	0.8	0.7	1.1	0.7	0.6	0.8	19.5	1.10%	96.18%
health care and social assistance	0.0	0.8	0.7	0.8	1.4	1.1	1.2	1.8	1.2	1.5	0.7	0.6	0.5	1.2	0.6	0.6	0.7	15.4	0.87%	97.05%
other municipal government services	0.0	0.6	0.5	0.5	1.1	0.9	1.0	1.4	1.0	1.2	0.5	0.4	0.4	0.7	0.5	0.5	0.6	11.8	0.67%	97.72%
government education services	0.0	0.4	0.4	0.4	0.7	0.6	0.7	0.9	0.7	0.9	0.4	0.3	0.3	0.4	0.3	0.3	0.3	8.0	0.45%	98.17%
support activities for agriculture and forestry	0.0	0.7	0.4	0.4	0.8	0.6	0.6	1.1	0.7	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2	7.4	0.42%	98.59%
non-profit institutions	0.0	0.4	0.3	0.4	0.6	0.5	0.6	0.7	0.5	0.6	0.3	0.2	0.2	0.3	0.2	0.2	0.2	6.4	0.36%	98.95%
government health services	0.0	0.2	0.2	0.2	0.4	0.3	0.4	0.5	0.3	0.4	0.2	0.1	0.1	2.3	0.1	0.1	0.1	5.9	0.33%	99.28%
non-municipal government services	0.0	0.5	0.4	0.4	0.4	0.4	0.4	0.6	0.4	0.5	0.3	0.2	0.2	0.3	0.2	0.2	0.2	5.8	0.33%	99.61%
educational services	0.1	0.3	0.3	0.2	0.4	0.3	0.4	0.4	0.3	0.4	0.2	0.2	0.2	0.3	0.2	0.2	0.2	4.6	0.26%	99.88%
Wild fishing, hunting and trapping	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.2	2.2	0.12%	100.00%
Yearly Total	2	115	96	103	163	136	151	207	146	169	70	59	59	93	61	59	76	1765	—	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table B.3: Heatmap of Added Value Effects, by Sector and Year, in Millions of 2024 dollars

Industry Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Sector Total	% of Total	Cumul. %
financial, insurance, real estate, investment	0.2	11.3	9.8	10.6	16.7	14.0	19.4	23.4	17.1	20.9	10.3	8.6	9.3	12.2	8.2	6.7	8.5	207.3	25.64%	25.64%
trade, transportation and warehousing	0.1	6.8	5.7	6.0	9.9	8.3	9.0	13.1	9.9	13.8	5.2	3.6	3.6	7.7	3.8	3.7	5.4	115.7	14.31%	39.94%
manufacturing	0.1	6.9	5.5	6.1	12.2	10.7	11.5	14.9	8.2	9.3	4.0	3.4	3.0	4.8	3.4	3.2	4.7	112.1	13.86%	53.80%
arts, entertainment, recreation, accommodation and food services	0.0	2.1	3.4	3.5	4.9	4.3	2.8	5.1	4.5	9.0	1.7	2.0	2.7	3.9	3.6	4.8	4.4	62.6	7.74%	61.54%
utilities	0.0	1.3	1.1	4.2	4.6	4.4	4.7	5.7	5.2	2.0	0.9	0.9	0.8	1.4	1.1	1.1	1.2	40.6	5.02%	66.56%
households	0.0	2.6	2.3	2.4	3.8	3.1	3.5	4.9	3.4	4.2	1.7	1.3	1.2	1.9	1.2	1.2	1.6	40.3	4.98%	71.54%
crop, aquaculture, and animal production	0.1	6.9	4.0	3.0	3.5	1.9	1.8	5.7	6.1	2.3	0.4	0.7	0.7	0.8	0.6	0.6	0.7	39.8	4.92%	76.46%
professional, scientific and technical services	0.0	2.0	1.7	1.8	2.5	2.1	2.5	3.4	2.5	3.0	1.3	1.1	1.1	1.8	1.1	1.1	1.3	30.2	3.74%	80.20%
admin & support, waste management & remediation services	0.0	1.1	1.0	1.1	2.1	1.7	2.0	2.5	1.9	2.3	1.0	0.9	0.9	1.3	0.9	0.9	1.3	23.0	2.84%	83.04%
information and cultural industries	0.0	1.6	1.4	1.5	2.0	1.7	1.9	2.4	1.7	2.2	0.9	0.7	0.8	1.2	0.8	0.8	1.0	22.5	2.79%	85.83%
other aboriginal government services (exc. health and education)	0.0	0.4	1.0	1.1	2.1	1.8	1.8	2.1	1.5	1.1	1.2	0.6	0.5	0.4	0.4	0.3	0.5	16.8	2.07%	87.90%
mining, quarrying, and oil and gas extraction	0.0	1.2	0.9	1.1	2.1	1.8	1.9	1.5	0.9	1.3	0.4	0.4	0.3	0.7	0.5	0.5	0.7	16.1	1.99%	89.89%
construction	0.0	0.9	0.8	1.0	1.1	0.9	1.0	1.5	1.4	1.2	0.8	0.4	0.4	0.6	0.4	0.4	0.4	13.2	1.63%	91.52%
other services (except public administration)	0.0	0.8	0.7	0.7	1.1	0.9	1.0	1.4	1.0	1.2	0.6	0.5	0.4	0.7	0.4	0.4	0.5	12.3	1.53%	93.04%
forestry and logging	0.0	0.8	0.6	0.7	1.2	1.1	1.1	1.5	0.8	1.0	0.5	0.4	0.3	0.6	0.4	0.4	0.6	12.1	1.50%	94.55%
health care and social assistance	0.0	0.6	0.5	0.5	0.9	0.8	0.8	1.2	0.9	1.1	0.5	0.4	0.4	0.8	0.4	0.4	0.5	10.8	1.33%	95.88%
other municipal government services	0.0	0.4	0.4	0.4	0.7	0.6	0.7	0.9	0.6	0.8	0.4	0.3	0.3	0.5	0.3	0.3	0.4	8.1	1.00%	96.87%
government education services	0.0	0.4	0.3	0.4	0.6	0.5	0.6	0.8	0.6	0.7	0.3	0.3	0.2	0.4	0.2	0.2	0.3	6.8	0.84%	97.72%
support activities for agriculture and forestry	0.0	0.4	0.3	0.2	0.5	0.3	0.3	0.7	0.4	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	4.4	0.54%	98.26%
non-profit institutions	0.0	0.2	0.2	0.2	0.4	0.3	0.3	0.4	0.3	0.4	0.2	0.1	0.1	0.2	0.1	0.1	0.1	3.7	0.46%	98.72%
government health services	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	1.3	0.1	0.1	0.1	3.4	0.42%	99.14%
educational services	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	2.9	0.35%	99.50%
non-municipal government services	0.0	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.8	0.35%	99.85%
Wild fishing, hunting and trapping	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	1.2	0.15%	100.00%
Yearly Total	0.9	49.5	42.1	47.0	73.7	61.9	69.5	94.0	69.6	78.8	32.8	27.0	27.5	43.7	28.5	27.4	34.7	808.5	—	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table B.4: Heatmap of Income Effects, by Sector and Year, in Millions of 2024 dollars

Industry Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Sector Total	% of Total	Cumul. %
trade, transportation and warehousing	0.1	4.1	3.4	3.6	5.7	4.7	5.1	7.5	5.7	8.2	3.2	2.2	2.3	4.8	2.4	2.3	3.3	68.4	20.65%	20.65%
manufacturing	0.1	4.0	3.2	3.6	6.1	5.3	5.7	7.5	4.1	4.7	2.0	1.9	1.6	2.2	1.5	1.5	2.2	57.1	17.24%	37.89%
arts, entertainment, recreation, accommodation and food services	0.0	1.3	2.2	2.3	3.0	2.6	1.8	3.4	2.8	5.7	1.0	1.1	1.9	2.6	2.4	3.0	3.0	40.1	12.10%	49.99%
financial, insurance, real estate, investment	0.0	2.2	2.0	2.1	3.0	2.5	4.0	4.4	3.2	3.9	2.2	1.7	1.8	2.1	1.5	1.1	1.4	39.2	11.82%	61.81%
professional, scientific and technical services	0.0	1.3	1.1	1.1	1.4	1.2	1.4	2.0	1.4	1.7	0.8	0.6	0.7	1.1	0.7	0.7	0.8	18.0	5.44%	67.25%
crop, aquaculture, and animal production	0.0	3.6	2.1	1.6	1.5	0.8	0.8	2.3	1.4	0.6	0.1	0.2	0.2	0.3	0.2	0.2	0.3	16.3	4.91%	72.16%
admin & support, waste management & remediation services	0.0	0.7	0.6	0.7	1.2	1.0	1.1	1.5	1.1	1.4	0.6	0.5	0.6	0.9	0.6	0.6	0.8	13.9	4.18%	76.34%
other aboriginal government services (excl. health and education)	0.0	0.3	0.6	0.7	1.5	1.2	1.3	1.5	1.0	0.7	0.8	0.4	0.3	0.3	0.3	0.2	0.3	11.4	3.45%	79.79%
information and cultural industries	0.0	0.5	0.5	0.5	0.8	0.7	0.8	1.1	0.9	1.1	0.5	0.4	0.4	0.7	0.5	0.5	0.6	10.5	3.16%	82.95%
utilities	0.0	0.3	0.3	1.0	1.0	1.0	1.0	1.2	0.9	0.3	0.2	0.1	0.1	0.3	0.2	0.2	0.2	8.4	2.55%	85.50%
other services (except public administration)	0.0	0.5	0.4	0.5	0.7	0.6	0.6	0.9	0.6	0.8	0.4	0.3	0.3	0.4	0.3	0.3	0.3	8.1	2.44%	87.94%
construction	0.0	0.4	0.4	0.4	0.5	0.4	0.5	0.6	0.6	0.6	0.4	0.2	0.2	0.3	0.2	0.2	0.2	6.3	1.90%	89.84%
health care and social assistance	0.0	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.4	0.5	0.2	0.2	0.2	0.4	0.2	0.2	0.3	5.1	1.53%	91.37%
forestry and logging	0.0	0.3	0.3	0.3	0.6	0.5	0.5	0.7	0.4	0.4	0.2	0.2	0.1	0.2	0.1	0.1	0.2	4.9	1.49%	92.86%
government education services	0.0	0.3	0.2	0.2	0.4	0.3	0.4	0.5	0.4	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	4.5	1.34%	94.21%
other municipal government services	0.0	0.2	0.2	0.2	0.4	0.3	0.4	0.5	0.3	0.4	0.2	0.2	0.1	0.2	0.2	0.2	0.2	4.0	1.22%	95.43%
mining, quarrying, and oil and gas extraction	0.0	0.2	0.2	0.2	0.5	0.4	0.4	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.4	1.02%	96.45%
non-profit institutions	0.0	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.0	0.89%	97.35%
support activities for agriculture and forestry	0.0	0.2	0.2	0.1	0.3	0.2	0.2	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	2.7	0.80%	98.15%
government health services	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	1.0	0.0	0.0	0.1	2.5	0.75%	98.90%
non-municipal government services	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	1.7	0.52%	99.42%
educational services	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.7	0.51%	99.93%
Wild fishing, hunting and trapping	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.07%	100.00%
households	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%	100.00%
Yearly Total	0.4	21.4	18.5	19.9	29.7	24.8	27.2	37.9	26.2	32.6	13.4	10.9	11.5	18.6	11.8	11.6	14.9	331.4	—	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Table B.5: Heatmap of Employment Effects, by Sector and Year, in FTEs

Industry Sector	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Sector Total	% of Total	Cumul. %
trade, transportation and warehousing	2	92	78	82	120	101	108	150	115	166	62	40	40	91	43	42	62	1,391	21.92%	21.92%
arts, entertainment, recreation, accommodation and food services	1	52	83	86	110	96	61	105	85	168	31	37	60	74	75	106	93	1,323	20.85%	42.77%
manufacturing	1	71	56	63	103	90	97	124	65	75	30	27	24	34	24	21	31	937	14.76%	57.53%
financial, insurance, real estate, investment	1	30	26	28	36	31	49	52	38	51	29	24	25	28	19	15	19	500	7.88%	65.41%
crop, aquaculture, and animal production	1	102	58	44	39	21	20	55	32	13	2	4	5	5	4	4	4	413	6.51%	71.92%
professional, scientific and technical services	0	29	25	26	29	24	28	36	26	29	13	11	11	17	11	11	14	339	5.34%	77.26%
admin & support, waste management & remediation services	0	17	15	16	27	23	27	32	22	28	12	12	11	15	9	9	14	290	4.56%	81.82%
other services (except public administration)	0	15	13	13	18	16	17	22	15	20	10	8	7	10	6	6	8	203	3.21%	85.03%
information and cultural industries	0	12	10	11	14	12	14	18	12	15	5	4	4	8	5	4	6	156	2.45%	87.48%
health care and social assistance	0	10	8	9	13	11	12	17	11	15	7	6	5	10	5	5	7	150	2.37%	89.85%
utilities	0	3	3	11	10	9	10	12	11	3	2	2	2	4	3	3	3	91	1.43%	91.28%
construction	0	6	6	7	7	5	6	8	8	8	5	3	2	3	2	2	2	81	1.28%	92.56%
government education services	0	4	4	4	6	5	6	8	6	7	3	3	2	4	2	3	3	70	1.11%	93.67%
non-profit institutions	0	5	4	4	7	6	6	8	5	7	3	2	2	3	2	2	3	70	1.10%	94.78%
forestry and logging	0	5	5	5	7	6	6	8	4	5	2	1	1	2	1	1	2	60	0.95%	95.73%
educational services	2	4	4	3	4	3	4	4	3	4	2	2	1	2	2	2	2	48	0.75%	96.48%
support activities for agriculture and forestry	0	5	3	3	5	3	3	6	4	3	2	1	1	1	1	1	1	43	0.68%	97.16%
mining, quarrying, and oil and gas extraction	0	4	3	3	5	4	5	5	3	3	1	1	1	1	1	1	1	41	0.64%	97.80%
government health services	0	2	2	2	3	2	2	3	2	2	1	1	1	14	1	1	1	40	0.63%	98.44%
other aboriginal government services (excluding health and education)	0	1	3	3	5	4	4	5	3	1	3	1	1	1	1	1	1	38	0.60%	99.04%
other municipal government services	0	2	2	2	3	3	3	4	3	3	1	1	1	2	1	2	2	36	0.57%	99.61%
non-municipal government services	0	2	1	1	1	1	1	2	1	1	1	1	1	1	1	0	1	16	0.26%	99.86%
Wild fishing, hunting and trapping	0	1	0	0	0	1	1	1	0	1	0	0	1	1	0	0	1	9	0.14%	100.00%
households	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%	100.00%
Yearly Total	9	472	412	426	573	478	491	684	476	628	228	191	209	328	218	242	280	6,346	—	—

Source: Big River Analytics Calculations. CF Grants Data. Statistics Canada, Supply and Use tables, 2008-2021. Statistics Canada Census of the Population, 2021. Statistics Canada, Labour Force Survey, 2019 to 2024. Statistics Canada, Consumer Price Index, 2008 to 2024.

Appendix C: Industry Classifications and Economic Sectors

Our model is built using the **summary-level Input-Output Industry Classification (IOIC)** system,[7] which decomposes the Canadian economy into more than 30 industry categories.

However, for the purpose of clear and meaningful analysis, we present results using a more aggregated classification. Specifically, we report findings using a custom aggregation of the IOIC system into 24 economic sectors, which enables us to summarize results while preserving important sectoral distinctions. Table D.1 provides details on the correspondence between the summary-IOIC and aggregate-IOIC classifications. It also provides a brief description of each of the sectors. The column "Categories from detail-IOIC that are included" provides the **groups** of summary-IOIC codes that are contained within each aggregated category.

Table C.1: Custom Aggregate IOIC Classification of Industries and Economic Sectors

Aggregate IOIC category name	Description	Categories from detail-IOIC that are included
Crop, aquaculture, and animal production	Land- and water-based agro-food production	Crop, aquaculture, and animal production (BS111, BS112)
Forestry and logging	Forest resources, including timber and related wood products	Forestry and logging (BS113)
Wild fishing, hunting, and trapping	Harvest and processing of fish, shellfish, and wild animals.	Fishing, hunting, and trapping (BS114)
Support activities for agriculture and forestry	Support to farming and forestry, such as soil preparation, planting, harvesting support, and forest management	Support activities for agriculture and forestry (BS115)
Mining, quarrying, and oil and gas extraction	Extraction of mineral and fossil/organic resources from the earth	Mining, quarrying, and oil and gas extraction (BS210)
Utilities	Distribution of power, natural gas, water, and sewage	Utilities (BS220)
Construction	All construction-related activities: residential, non-residential, engineering, and repair	All construction-related categories (BS23A, BS23B, BS23C, BS23D, BS23E)

[7] The complete layering of the IOIC classification system can be found in Statistics Canada's web page: https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=137240

Manufacturing	All manufacturing: textile, metallic, electronic, motor, aerospace, machinery, petro-chemical, etc.	Manufacturing (BS3A0)
Trade, transportation and warehousing	Distribution of goods, wholesale and retail trade, freight transportation, and warehousing	Wholesale trade, retail trade, transportation and warehousing (BS410, BS4A0, BS4B0)
Information and cultural industries	Publishing, broadcasting, telecommunications, and digital media	Information and cultural industries (BS510)
Financial, insurance, real estate and investment	Finance, insurance, real estate, rental and leasing, holding companies, depository credit.	All financial-related categories (BS52B, BS5B0, BS53C)
Professional, scientific and technical services	Knowledge-based services, including legal, accounting, engineering, scientific research, consulting	Professional, scientific and technical services (BS540)
Administrative and support, waste management and remediation services	Routine support services such as staffing, building maintenance, security, waste collection, and environmental cleanup and remediation.	Administrative and support, waste management and remediation services (BS560)
Educational services	Instruction and training; including primary, secondary, post-secondary, and specialized educational programs.	Educational services (BS610)
Health care and social assistance	Medical care, health services, and social support; including hospitals, clinics, nursing facilities, and community welfare programs	Health care and social assistance (BS620)
Arts, entertainment, recreation, accommodation and food services	Promote cultural, artistic, and leisure activities; including performing arts, spectator sports, museums, amusement parks, and recreational facilities. Hotels, lodging, restaurants, and food services	Arts, entertainment, recreation and food services. Accommodation and food services (BS710, BS720)
Other services (except public administration)	Catch-all category to classify miscellaneous services oriented towards private households; services can be provided by particulars or by professional organizations. Excludes public administration	Other services (except public administration)—BS810
Government education services	Public sector institutions responsible for delivering education services at the primary, secondary, and post-secondary levels, funded and administered by government bodies.	Government education services (GS610)
Government health services	Publicly funded health care institutions and programs operated by government agencies, including hospitals, clinics, and public health initiatives.	Government health services (GS620)
Non-municipal government services	Government activities other than education and health; including administrative,	Other federal government services, other provincial and

	regulatory, public safety, and national defense services. At federal, provincial, and territorial level.	territorial government services (GS911, GS912)
Other municipal government services (excluding education and health)	Government activities other than education and health; including administrative, regulatory, public safety, and national defense services. At the municipal level.	Other municipal government services (GS913)
Other Aboriginal government services (excluding health and education)	Services provided by Indigenous governance bodies that support community governance, administration, and local programs, excluding education and health care. Includes First Nations governments and tribal councils.	Other Aboriginal government services (GS914)
Non-profit institutions	All non-profit sectors; including social assistance, religious, arts and entertainment, civic, etc.	All non-profit sectors (NP610, NP621, NP624, NP710, NP8131, NP813A, NP999)
Households	Private households, consumers.	Not part of IOIC, but part of the IOCC classification (P5000)

Source: Big River custom aggregation of detail-level IOIC classification. Statistics Canada, IOIC classification.
Note: The code groups from the IOIC classification provided in the column "Categories from detail-IOIC that are included" are presented according to the first layer of the classification found in Statistics Canada web page https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=137240