

Economic Contribution of College of the Rockies

*Analysis of Investment Effectiveness
and Economic Growth*

Executive Summary

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HIGHLIGHTS

- Students enjoy an attractive **13%** annual return on their investment of time and money.
- For every \$1 the students invest in COTR, they receive a cumulative of **\$2.40** in higher future earnings over the course of their working careers (after discounting).
- Taxpayers see a real money return of **21%** on their annual investments in COTR.
- The Province of British Columbia benefits from improved health and reduced welfare, unemployment, and crime, saving the public some **\$649,800** per year each year that students are in the workforce.
- The COTR Service Area economy receives roughly **\$133.8 million** in income each year due to the annual activities of COTR and the cumulative effects of its past students. This figure amounts to **4.3%** of total income in the regional economy.

3. **Taxpayer Perspective** – Social benefits and avoided costs;
4. **Investment Analysis** – Return to taxpayers for their college support.

The economic impact model has been subjected to peer review and field-tested to generate more than 700 studies for community and technical colleges in the U.S. and Canada. Model results are based on solid economic theory, carefully drawn functional relationships, and a wealth of national and local education-related data.

RESULTS

For a more in-depth discussion of the results, the reader is encouraged to consult the Main Report, “Economic Contribution of College of the Rockies,” containing detailed assumptions, context, and computation procedures.

➤ Regional Economic Benefits

COTR affects the local economy in three ways: 1) through its local purchases, including wages paid to faculty and staff, 2) through spending of students who come from outside the region, and 3) through a human capital effect stemming from an increase in the skill base of the local workforce. These effects break down as follows:

- *COTR Operations Spending*

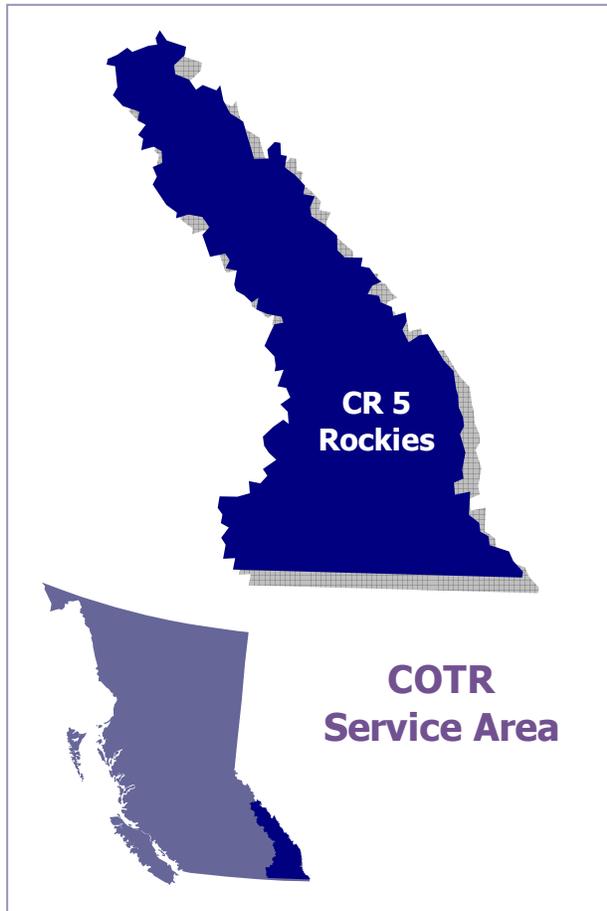
COTR creates regional income through the earnings of its faculty and staff, as well as through its own operating and capital expenditures. Adjusting for taxes and other monies withdrawn from the local economy in support of COTR, it is estimated that the

INTRODUCTION

How do the COTR Service Area economy and the Province of British Columbia benefit from the presence of College of the Rockies?

An obvious question often asked, but rarely answered with more than anecdotes. In this study, CCbenefits applies a comprehensive economic model designed to quantify the economic benefits of community colleges and technical institutes and translate these into common sense benefit/cost and investment terms. The study tracks four types of benefits:

1. **Regional Economic Benefits** – Creation of regional income;
2. **Student Perspective** – Higher earnings captured by students;



present-day COTR Service Area economy receives roughly \$17.4 million in labour and non-labour income each year due to COTR operations and capital spending.

- *Student Spending Effect*

About 11% of COTR's students come from outside the area (net of long distance students who are not physically present in the region while attending). While in the area, these students spend money to buy books and supplies, rent apartments, purchase food, pay for transportation, attend sports events, go to movies, and so on. These expenditures create revenues, jobs, and incomes for local businesses. It is estimated that the spending of COTR's out-of-region students generates approximately

\$3.9 million each year in regional income in the COTR Service Area.

- *Past Student Productivity*

Since its establishment COTR has been providing students with the training they need to obtain highly-skilled, high-paying jobs in the region. Over time the skills of COTR's past and present students have built up and accumulated in the workforce, translating into higher income for students and a more robust COTR Service Area economy overall. Based on current enrolment, turnover, and the growth of instruction over time, it is estimated that the regional workforce embodies a cumulative of 894,000 credit hour equivalents (CHEs) of COTR instruction. The accumulated contribution of COTR skills adds some \$112.5 million in regional income to the current economy of the COTR Service Area.

Altogether the effects of college operations, student spending, and past student productivity yield a total impact of \$133.8 million in added regional income in the COTR Service Area economy.

➤ **Student Perspective**

Benefits of higher education are most obvious from the student perspective: learners sacrifice current earnings (as well as money to pay for tuition) in return for a lifetime of higher earnings. For every credit hour equivalent (CHE) completed, COTR students earn, on average, \$78 more per year each year they are in the workforce. Alternatively, for every full-time year they attend they earn an additional \$2,348 per year. Aggregate higher earnings for all

exiting students amount to some \$7.3 million per year for each year they remain in the workforce.

From an investment standpoint, COTR students enjoy a 13% rate of return on their investments of time and money. This compares favorably with returns on other investments, e.g., long-term return on stocks and bonds. The corresponding benefit/cost ratio is 2.4, i.e., for every \$1 students invest in COTR education, they receive a cumulative of \$2.40 in higher future earnings over their working careers. This is a real return that accounts for any discounting that occurs during the entire time horizon. The payback period is 10 years.

➤ Taxpayer Perspective

Provincial and local government spent \$18.3 million in support of COTR during the analysis year. Is this a good use of taxpayer money? Our analysis indicates that the answer is a resounding yes: Returns far outweigh costs, and the attractiveness of the taxpayer investment is even stronger when a collection of incidental social savings is included in the assessment.

For example, persons with higher education are less likely to smoke or abuse alcohol, draw social assistance or unemployment benefits, or commit crimes. This translates into associated dollar savings (avoided costs) amounting to some \$7 per credit hour equivalent per year, counted as an indirect benefit of COTR education. **When aggregated across all exiting students, the Province of British Columbia benefits from \$649,800 worth of avoided costs per**

year, each year that students are in the workforce. Social savings, commonly known as externalities, break down as follows:

- *Improved Health*

Employers in the Province of British Columbia see health-related absenteeism decline by 1,300 days per year, with a corresponding annual dollar savings of approximately \$169,100. The province benefits from health-related savings of roughly 60 fewer smokers and 18 fewer alcohol abusers. Corresponding dollar savings are \$269,500 and \$180,300 per year, now and into the future (these savings include insurance premiums, co-payments and deductibles, and withholding for health care).

- *Reduced Crime*

Crime rates drop with each year of higher education. In the Province of British Columbia, about 40 fewer criminal offences will be committed, resulting in annual savings of \$8,000 (combined savings from reduced arrest, prosecution, jail, and reform costs). Reductions in victim costs (e.g., property damage, legal expenses, lost workdays, etc.) result in savings of \$7,700 per year.

- *Reduced Welfare/Unemployment*

There will be around 20 fewer claims for social assistance, and 20 fewer drawing unemployment benefits, saving taxpayers some \$8,000 and \$7,200 per year, respectively.

➤ Investment Analysis

The return on a year's worth of provincial and local government investment in COTR is obtained by projecting associated educational benefits into the future, discounting them back to the present, and weighing these against the \$18.3 million provincial and local taxpayers spent during the analysis year to support the college. The analysis is based on the portion of COTR operations that is wholly dependent on provincial and local government support. Two investment perspectives are possible, one broad and one narrow.

- *Broad Perspective*

Taxpayers expect their annual investment in COTR to result in higher lifetime earnings for students and social savings from lifestyle changes (reduced crime, welfare and unemployment, and improvements in health). From a broad investment perspective, the value of all future income and associated social savings is compared to the year's worth of provincial and local taxpayer support that made the benefits possible. Following this procedure, it is estimated that COTR provides a benefit/cost ratio of 19, i.e., every dollar of provincial and local tax money invested in COTR today returns to the public at large a cumulative of \$19 over the course of the students' working career. As above, this is a real return, accounting for any discounting that may occur during the established time horizon. The nominal return would be significantly higher.

- *Narrow Perspective*

The narrow perspective limits the benefit stream to provincial and local government budgets, namely, increased revenue and reduced expenditures. For example, in place of total increased income, the narrow perspective includes only increased provincial and local government receipts from those higher incomes. Similarly, in place of overall crime, welfare, unemployment, and health savings, the narrow perspective includes only those portions that translate to actual reductions in provincial and local government expenditures.

Note here that it is normal for the government to undertake activities wanted by the public, but which are unprofitable in the marketplace. This means that positive economic returns are generally not expected from government investments. From the narrow taxpayer perspective, therefore, even a small positive return (a benefit/cost ratio equal to or just greater than 1, or a rate of return equal to or just greater than the 4% discount rate used in this analysis) would be a favorable outcome, certainly one that justifies continued taxpayer support of the college. For COTR, narrow perspective results greatly exceed minimum expectations.

Results indicate strong and positive returns: a rate of return of 21%, and a benefit/cost ratio of 3.9 (every dollar of provincial and local tax money invested in COTR today returns \$3.90 to the provincial and local government).

CONCLUSION

The results of this study demonstrate that COTR is a sound investment from multiple perspectives. The college enriches the lives of students and increases their lifetime incomes. It benefits taxpayers by generating

increased tax revenues from an enlarged economy and reducing the demand for taxpayer-supported social services. Finally, it contributes to the vitality of both the local and provincial economies.

Benefits at a Glance

Economic Growth Analysis			
Added Regional Income			
College operations effect			\$17,429,800
Student spending effect			\$3,883,700
Past student productivity effect			\$112,535,400
TOTAL INCOME			\$133,848,900
Annual Benefits			
<i>Higher earnings</i>			
Aggregate (all students)			\$7,323,600
Per credit hour equivalent (CHE)			\$78
Per full time equivalent (FTE)			\$2,348
<i>Social savings</i>			
Aggregate (all students)			\$649,800
Per credit hour equivalent (CHE)			\$7
Per full time equivalent (FTE)			\$208
Investment Analysis	Rate of Return	Benefit/Cost	Payback (Years)
Students	12.6%	2.4	9.7
Taxpayers: Broad Perspective	NA	19.3	NA
Taxpayers: Narrow Perspective	20.6%	3.9	6.5

Source: See Volume 1: Main Report and Volume 2: Detailed Results.

This short summary report is one of six products generated for the impact study. In addition, one long report intended for economists and college institutional researchers lays out detailed assumptions and analysis. Another report provides detailed tabular results by gender and entry level of education, and a fact sheet contains highlights of study results at a glance. The study also includes a write-up in layman's terms about differences between broad and narrow taxpayer perspectives. Lastly, a PowerPoint presentation shows main results for college presidents to adapt and use in speeches before provincial legislators and other education stakeholders.