

March 2016

Yukon College Socioeconomic Profile

Prepared for



Prepared by

**McDOWELL
GROUP**

and Vector Research



Yukon College Socioeconomic Profile

Prepared for:
Yukon College

Prepared by:

**McDowell
GROUP**
Juneau • Anchorage

 **Vector Research**
Whitehorse

McDowell Group Anchorage Office
1400 W. Benson Blvd., Suite 510
Anchorage, Alaska 99503

McDowell Group Juneau Office
9360 Glacier Highway, Suite 201
Juneau, Alaska 99801

Website: www.mcdowellgroup.net

March 2016

Table of Contents

Executive Summary.....	1
Introduction.....	4
Purpose of the Study	4
Methodology	4
Overview of Yukon	5
Overview of Yukon College	7
Brief History	7
Campuses	7
Programs and Courses.....	10
Students.....	12
College Governance	13
Centres and Institutes.....	14
Publications.....	16
Revenues and Expenditures	17
Economic Impact of Yukon College.....	19
Yukon College’s Direct Economic Footprint	19
Multiplier Effects.....	20
Yukon College Employment Distribution	24
Broader Socioeconomic Impacts of Yukon College.....	25
Impacts Identified by Yukon Residents	25
Student Survey Highlights	28
Key Indicators for Social Returns from Yukon College.....	29
Roles of the Thirteen Campuses.....	45
Appendix 1 – Demographics of Yukon College Students	47
Appendix 2 – Selected Bibliography.....	50

Index of Tables

Table 1. Population of Yukon Communities, 2015	5
Table 2. Yukon Employment by Major Industry, January 2016 (Unadjusted)	6
Table 3. Yukon College Course Registrations by Campus, 2014-2015	10
Table 4. Yukon College Student Enrolment by Program Area, 2014-2015	12
Table 5. Yukon College School Enrolment, by Gender, Age, and Aboriginal Status, 2014-2015	13
Table 6. Yukon College Sources of Revenue, 2015	17
Table 7. Yukon College Major Expenditure Categories, 2015	18
Table 8. Direct Yukon College Spending – Multiplier Effects in Yukon 2014-2015	21
Table 9. Additional Yukon College Spending – Multiplier Effects in Yukon 2014-2015	22
Table 10. Total Yukon College-Related Spending – Multiplier Effects in Yukon 2014-2015	22
Table 11. NISJ Training Delivery: April 1, 2014 – March 31, 2015	35
Table 12. Types of Course Offerings at Community Campuses 2014-2015	37
Table 13. Gross Domestic Expenditures on Research and Development by Funding Sector	40
Table 14. 2014–2015 Yukon Research Centre Projects and Partners	41
Table 15. Yukon College Students Enrolled in For-credit Courses or Programs Who Indicate an Aboriginal Identity	43
Table 16. Yukon College Courses Relevant to Governance, 2014-2015	44
Table 17. Demographics of Academic and Skill Development, 2014-2015	47
Table 18. Demographics of Career and Technical Programs, 2014-2015	47
Table 19. Demographics of Trades, 2014-2015	48
Table 20. Demographics of Degree and Post-graduate Programs, 2014-2015	48
Table 21. Demographics of University Transfer Programs, 2014-2015	49
Table 22. Demographics of All Yukon College Credit Programming, 2014-2015	49

Executive Summary

Yukon College generates substantial economic activity and employment throughout the territory. Additionally, the College facilitates a higher quality and readily available workforce, increased productivity for employers, and increased earning potential for residents. The College also has a profound impact on the quality of life. This study examines the economic impacts of Yukon College generated through its spending and employment, followed by an analysis of the College's broader socioeconomic impacts. Key findings are presented below.

Impacts of Yukon College Spending

With total annual expenditures of \$43 million, Yukon College is an important economic engine in Yukon, including generating a range of additional indirect and induced (multiplier) impacts.

- Yukon College's total revenues for 2014-2015 operating year were approximately \$46 million, of which 49 percent (or \$22.8 million) are Government of Yukon operating contributions. Another 38 percent (or \$17.6 million) of total revenue comes from third party funded projects and programs, as well as fees collected for training and non-credit courses. Yukon College also enters into contracts with departments of the Government of Yukon (valued in 2014-2015 at \$9.5 million).
- Yukon College paid wages to 630 workers in 2014-2015, including 276 permanent and term employees and another 354 employed in a casual (temporary or occasional) capacity, or a full-time equivalency of 456 jobs.
- Yukon College paid \$22.2 million in total wages in 2014-2015. This includes \$20.1 million paid to employees in Whitehorse and \$2.1 million paid to employees located in Yukon's rural communities.
- Yukon College spent \$15.7 million on goods and services in 2014-2015 with a broad range of businesses and organizations. This spending creates additional jobs and wages in the support sector.
- The economic impact of Yukon College also includes spending by visiting scholars, presenters and collaborators; spending by friends and relatives visiting students; and finally, off-campus expenditures made by out-of-territory students. Together this spending is estimated to total \$0.8 million in 2014-2015.
- Total direct Yukon College-related spending (wages, purchases, and spending by visitors) totaled \$43.8 million in 2014-2015. The additional economic impact of this spending amounts to \$18.4 million in indirect and induced (multiplier) effects that include 86 full-time equivalent support sector jobs and \$5.1 million in labour income.

- In all, the employment impact of Yukon College totals 542 FTE jobs (456 direct jobs plus 86 indirect and induced jobs) and a total of \$27.6 million in labour income).
- Total Yukon College-related economic output in 2014-2015 was \$62.2 million (\$43.8 million in direct impacts plus \$18.4 million in indirect and induced impacts).

Broader and Long-term Socioeconomic Impacts

Yukon College's broader impacts are woven through the fabric of life in the territory.

- Residents who lack, or feel they lack, skills to enter either higher education or the labour force can get both skills and support through the College, which provides access to a continuum of educational opportunities.
- Students can obtain needed skills without giving up their jobs or leaving Yukon and as a result can maintain close family relationships, spend fewer dollars on education, and spend them within the territory instead of elsewhere.
- The Yukon business community benefits from a supply of more efficient and productive workers and, as a result, imports fewer workers from outside Yukon.
- Yukon First Nations and territorial agencies benefit from employees with training specific to the governance challenges of Yukon, including specialized governance and service delivery training through the Northern Institute of Social Justice and state-of-the-art mining and heavy industrial training through the Centre for Northern Innovation in Mining.
- The population of Yukon enjoys the benefits of access to resources, knowledge, and training in northern cultures through Yukon College's First Nation Initiatives, as well as other cultural assets such as the School of Visual Arts in Dawson City in addition to campus clubs and events.
- Yukon businesses and policy makers benefit from Yukon Research Centre's (YRC) research projects both in terms of economic benefits from project spending and increased knowledge and improved technology from research discoveries, and that research is tailored to address climate change, infrastructure, food security, and other major trends affecting the North.

Other economic benefits of Yukon College include the following:

- Students with postsecondary education tend to earn more and as a result contribute more to the tax base and are healthier, less likely to be incarcerated, and less likely to need government services.
- Research on the value of education by Statistics Canada and others suggests a four-year degree from Yukon College can be worth additional compensation over a 20-year work period of \$488,000 for men and \$296,000 for women relative to individuals who only graduate from high school. Yukon College students who receive a diploma (two-years) or certificate (one-year) may benefit

from an additional \$166,000 for men and \$121,000 for women over the 20-year time period. The differences by gender reflect the wage gap between men and women and also capture factors such as time away from work. These income benefits are worth approximately \$30 million in lifetime earnings to approximately 185 Yukon College students who obtain degrees, diplomas, or certificates each year.

- Yukon Research Centre (YRC) obtained nearly half its \$4.4 million operating budget last year from outside sources, primarily from partners in its roughly 80 research projects. In 2012-2013, the average ratio of outside funding to YRC funding for a research project was 8 to 1. Even when all YRC operational funds are included, YRC obtained \$1.33 in third-party funding for every dollar invested by the Yukon Government.

Purpose of the Study

Yukon College is an important component of the Yukon economy, generating substantial economic activity and employment throughout the territory. The College facilitates a higher quality and readily available workforce, resulting in increased productivity for businesses and agencies, and increased earnings potential for Yukon residents, with more jobs filled by residents versus workers from outside the territory. College benefits also extend far beyond economics; the impact on the quality of life for Yukon residents is profound.

The purpose of this study is to first quantify the direct and secondary economic impacts of Yukon College through its spending and employment as well as student and visitor off-campus spending. The study then examines the College's broader quantitative and qualitative socioeconomic impacts.

Methodology

The study team worked with a steering committee of College staff and senior Yukon territorial leaders in economic development to address two main areas of economic impact:

1. The economic impact of Yukon College operations.
2. The College's broader and long-term socioeconomic impacts.

For component number one, a full year of Yukon College financial transaction data was obtained and analyzed using Tableau data-mining software. This allowed transactions to be grouped so that appropriate economic multipliers, obtained from Statistics Canada, could be applied. Economic multipliers are used to quantify the impacts of different types of spending as money circulates through a regional economy.

Research for component number two included:

- Review of Yukon College reporting and planning documents.
- Interviews with selected faculty and other staff.
- Review of literature that addresses the socioeconomic impacts of postsecondary education.
- Interviews with 35 Yukon community and business leaders representing all major communities.

This report also draws on the results of five facilitated discussions conducted for a companion research project that addresses Yukon College's transition to a university. Those discussions included residents of three Yukon communities (Dawson City, Haines Junction, and Teslin), as well as students at the Ayamdigut Campus in Whitehorse. The university transition is addressed in a separate report.

Overview of Yukon

Yukon's population has increased fairly steadily over the past decade to 37,500 in 2015. Approximately one-quarter of Yukon residents are Aboriginal. More than three-quarters of Yukon residents live in Whitehorse, which had a population of 29,000 in 2015.

Table 1. Population of Yukon Communities, 2015

Community	Population
Beaver Creek	119
Burwash Landing	108
Carcross	515
Carmacks	563
Dawson City	2,073
Destruction Bay	51
Faro	384
Haines Junction	899
Mayo	475
Old Crow	262
Pelly Crossing	383
Ross River	404
Tagish	266
Teslin	487
Watson Lake	1,478
Whitehorse Area	29,003
Other	56
Yukon Total	37,526

Source: Yukon Bureau of Statistics

Yukon's Gross Domestic Product (GDP), a measure of economic activity, was \$2.6 billion in 2014 according to Statistics Canada.¹ This is more than Nunavut's, but less than the GDP of Northwest Territories or the provinces. However, Yukon's GDP per capita is among Canada's highest (\$70,350 in 2014). Only Northwest Territories, Alberta, and Saskatchewan have higher per-capita GDPs. Nevertheless, Yukon imports more than twice as much as it exports. Only Nunavut imports more, measured as a percent of exports.

Yukon's GDP is evenly distributed among service-producing and goods-producing industries. Mining and energy are the largest industrial sectors, followed by construction, real estate, healthcare/social assistance, and public administration.² Tourism, a combination of industrial classifications, is also an important economic driver.

¹ Source: CANSIM Table 384-0038

² Source: CANSIM Table 379-0028

According to Government of Yukon, the Yukon labour force averaged 20,700 in 2015. Yukon's unemployment rate was 6.3 percent in 2015, slightly lower than the Canada's unemployment rate of 6.9 percent. Yukon's labour force participation rate in 2015 was 73.7, compared to 65.8 for Canada as a whole. The Yukon Bureau of Statistics reported that in January 2016, 41.8 percent of the labour force was employed by government. Among private sector workers, 27.3 percent were self-employed.³

Table 2. Yukon Employment by Major Industry,
January 2016 (Unadjusted)

Industry	Employment
Forestry, fishing, mining, oil and gas	500
Construction	1,800
Trade	1,800
Transportation and warehousing	800
Finance, insurance, real estate, and leasing	500
Professional, scientific, and technical services	1,300
Educational services	2,200
Health care and social assistance	2,700
Information, culture and recreation	900
Accommodation and food services	1,600
Other services	600
Public administration	3,500
Other industries	700
Total	18,900

Source: Yukon Bureau of Statistics, Yukon Employment,
January 2016

³ Yukon Employment Annual Review, Yukon Bureau of Statistics, 2015

Overview of Yukon College

This section of the report briefly describes Yukon College, including its history, program and course offerings, campuses, centres and institutes, and other features.

Brief History

Yukon College got its start in 1963 as the Whitehorse Vocation and Technical Training Centre. Two years later, the name was changed to Yukon Vocational and Technical Training Centre to reflect the student body coming from across Yukon. The Centre offered courses in office administration, building trades, automotive mechanics, heavy equipment operation, drafting, food services, nursing, and hairdressing. Teacher training began in 1977 as a University of British Columbia after-degree program. In 1983, college status was granted, and the Centre became Yukon College. The Yukon Native Teacher Education Program was started in 1989, offering a Bachelor of Education degree in partnership with the University of Regina.

In 1988, the College moved from its original Whitehorse campus to its current location at Yukon Place and renamed it Ayamdigut Campus. Family residences were added at this time, with single residences added in the 1990s. Since 1995, Yukon College has offered a Bachelor of Social Work through its ongoing partnership with University of Regina. It now offers three other bachelor's and one master's degree in addition to its diploma and certificate programs. The Northern Research Centre was launched on the Ayamdigut Campus in the 1990s and was renamed the Yukon Research Centre in 2010.

In 2014, Yukon College announced its first “made-in-Yukon” degree to be offered in the fall of 2017 – a three-year Bachelor of Policy Studies in Indigenous Governance, as well as a one-year, post-graduate certificate in Climate Change and Public Policy.

Campuses

Yukon College has 13 campuses throughout the Yukon. The main campus is located in Whitehorse. A second Whitehorse campus is located at the Whitehorse Correctional Centre. Each campus except the Correctional Centre offers:

- Access programs
- Career and job readiness programs
- Part-time continuing education courses
- Certificate, diploma and degree courses

While some classes may be offered on site, others are attended through video or internet technology.

Carcross Community Campus has been serving students from Carcross (pop. 515) and Tagish (pop. 266) since 1981. The campus has a dedicated classroom, a video-conference room, and a computer lab (open to the public). An example of a program includes the Essential Skills for Food Security program offered in partnership with the Carcross/Tagish First Nation, and the Outdoor Power Equipment Maintenance and Repair program. The campus received 18 credit and 74 non-credit course registrations in 2014-2015.

Carmacks Community Campus has served the Little Salmon Carmacks First Nation people and Carmacks (pop. 563) since 1986. The campus is located within the Little Salmon Carmacks Administration building. Program offerings include the Essential Skills for Cultural Artistry where students improve nine essential literacy skills while learning cultural art skills from elders and community crafters. In 2014-2015, the campus received 40 non-credit registrations.

Dawson City Campus, Tr'odëk Hätr'unohtän Zho (Klondike Learning House) serves the First Nation Tr'ondëk Hwëch'in and Dawson City (pop. 2,073). Established in 1981, the facility moved several times until a new facility was built in 2011. The campus is affiliated with the Klondike Institute of Art and Culture and the Yukon School of Visual Arts (its sister campus) offering dozens of artistic and creative courses. In 2014-2015, the campus received 93 credit and 523 non-credit registrations.

Faro Community Campus has been serving the community of Faro (pop. 384) since the late 1980s. Today, the campus is located within the Del Van Gorder School. Its computer lab is open to the public. In 2014-2015, the campus received 83 non-credit registrations.

Haines Junction Community Campus serves the communities of Haines Junction (pop. 899), Destruction Bay (pop. 51), Beaver Creek (pop. 119), and Burwash Landing (pop. 108), and the Champagne and Aishihik First Nations, Kluane First Nation, and the White River First Nation. The campus is located in the James Smith Government Administration Building in Haines Junction. In 2014-2015, the campus received 22 credit and 417 non-credit registrations.

Mayo Community Campus was established in 1981 to serve the First Nation of Nacho Nyak Dun and Mayo (pop. 475). The campus is located in the J.V. Clark School in Mayo. The Heritage and Culture Essential Skills program engages students in their understanding of local traditional knowledge. In 2014-2015, the campus received 7 credit and 336 non-credit registrations.

Old Crow Alice Frost Community Campus opened in 1987 to meet the education and training needs of the Vuntut Gwitchin people in Old Crow (pop. 262). Its building includes 2 classrooms and offices. Yukon College has developed partnerships with the Vuntut Gwitchin First Nation, Chief Zzeh Gittlit School, and other agencies in Old Crow. In 2014-2015, the campus received 41 non-credit registrations.

Pelly Crossing Hets'edän Kú' Learning House Campus was established in 1985 and serves the community of Pelly Crossing (pop. 383). After moving several times, the campus was moved into a new building next to the Eliza Van Bibber School in 2011. The Youth Employment Strategy (YES) Program provides students with job placements in local businesses. Under the Arts, Culture and Business Project,

students learn traditional skills. In 2014-2015, the campus received 20 credit and 228 non-credit registrations.

Ross River Dene Cho Kê'endj Campus has served the community of Ross River (pop. 404) since 1985. In 2000, the Campus moved to its current location. In 2014-2015, the campus received 54 credit and 177 non-credit registrations.

Teslin Community Campus opened in Teslin (pop. 487) in 1985. It is currently housed in the Teslin Tlingit Council Administration Building and includes a classroom and computer lab. In 2014-2015, the campus received 102 non-credit registrations.

Watson Lake Community Campus opened in 1981 to serve Watson Lake (pop. 1,478). The campus co-located with the high school built in 1992. In 2014-2015, the campus received 22 credit and 307 non-credit registrations.

Whitehorse Correctional Centre Campus has served inmates since the late 1970s. Programs are offered to assist students in preparing for their release. In 2014-2015, the campus received 296 non-credit registrations.

Whitehorse Ayamdigut Campus, the main campus located in Whitehorse (pop. 29,003), serves approximately 75 percent of Yukon College students. Housed on the campus is the Yukon Research Centre (YRC), the Centre for Northern Innovation in Mining, and the Northern Institute of Social Justice. On-site facilities include student housing (single and family), a gymnasium, Yukon Archives, Yukon Arts Centre, a research residence, and the YRC Laboratory and Cold Climate Storage facility. In 2014-2015, the campus received 4,372 credit and 4,458 non-credit registrations.

Table 3. Yukon College Course Registrations by Campus, 2014-2015

Campus	Credit Course Registrations	Non-Credit Course Registrations
Whitehorse Ayamdigut	4,372	4,458
Carcross Community	18	74
Carmacks Community	0	40
Dawson City Tr'odëk Hätr'unohtän Zho	93	523
Faro Community	0	83
Haines Junction Community	22	417
Mayo Community	7	336
Old Crow Alice Frost Community	0	41
Pelly Crossing Hets'edän Kú' Learning House	20	228
Ross River Dene Cho Kê'endj	54	177
Teslin Community	0	102
Watson Lake Community	22	307
Whitehorse Correctional Centre	0	296
Distributed Learning ("Z")	562	86
Delivered off-campus	215	683

Source: Yukon College

Programs and Courses

Programming at Yukon College varies from year to year depending on student demand. The following description refers to the 2015–2016 academic year, but is reasonably typical.

Degree, Diploma, and Certificate

Yukon College offers five degree programs, 17 diploma programs, 23 certificate programs, and 13 Notice of Completion programs (may or may not include credit courses), including:

- *College and University Preparatory* – College Access Pathways, Dual Credit (for high school students), English as a Second Language, Skills for Employment, Targeted Initiative for Older Workers, and Working & Leading: Youth Preparing for the Future.
- *Academic and Career* – Business Administration, Circumpolar Studies, Computer Support Technician, Culinary Arts, Early Learning and Child Care, Education – Yukon Native Teacher Education Program (B.Ed), Education Assistant, First Nations Governance and Public Administration, General Studies, Geological Technology, Health Care Assistant, Heritage and Culture, Liberal Arts, Multimedia Communication, Northern Environmental and Conservation Sciences, Northern First Nations Studies, Northern Justice and Criminology, Northern Outdoor and Environmental Studies, Northern Science, Northern Studies, Office Administration, Practical Nurse,

Public Administration, Renewable Resources Management, Restaurant Operations, Science, Social Work, Visual Arts, and Women's and Gender Studies.

- *Trades* – Air Rotary Drilling – Helper Training, Carpentry, Electrical, Heavy Equipment Technician Pre-Apprenticeship, Introduction to Surface Mining Operations/Heavy Equipment Operations, Pipe Trades, Underground Mining Operations, and Welding.
- *Professional and Personal Development* – Decision Making for Climate Change, First Nations Community Services Administration, First Nations Leadership Training, Northern Institute of Social Justice, Partners for Children, Primary Care Paramedic, Supply Management Training, Yukon Fisheries Field Assistant, and Yukon Water and Wastewater Operator.

Three degrees – Bachelor of Science in Environmental and Conservation Sciences, Bachelor of Social Work, and Bachelor of Education – are co-delivered through partnerships with the University of Regina and the University of Alberta.

The programs are offered through six schools: School of Academic and Skill Development; School of Health; Education and Human Services; School of Management, Tourism, and Hospitality; School of Liberal Arts; School of Science; and School of Trades Technology and Mining/Trades/CNIM.

Continuing Education

Continuing Education courses are available at its campuses, as well as online courses through its partners site, *Ed2Go*. Continuing Education Courses offered include:

- Business and Professional Training – Bookkeeping and Accounting, Professional Development Workshops, Project Management, and Supply Management Training
- Conflict Resolution
- First Aid (Red Cross) – Emergency Medical Responder, Standard First Aid/CPR-C, Wilderness First Aid
- Languages – Spanish
- Northern Gardening
- Trades and Safety – Industry Training

Distance Education

Yukon College offers Distance Learning courses through two formats:

- Web-conferencing – attended in a live (real-time) class via the Internet.
- Online – No in-person classes. All course work is conducted online.

Distance education courses are offered in Academic Upgrading, English, Archiving, Communications, Early Learning and Child Care, Computer, History, Political Science, Psychology, Women's Studies, Education, Environment, and Northern Studies.

Yukon First Nations Core Competency

Yukon is the traditional home of 14 First Nations. Yukon College is phasing in a requirement that all students and employees have a fundamental understanding of six key aspects of Yukon First Nations: history, heritage and culture, governance, residential schools, contemporary topics, and world views. As of April 2015, 93 percent of permanent and term College employees had achieved this core competency.

Students

In 2014-2015, Yukon College had 685 full-time and 526 part-time students enrolled in credit programming. Another 4,172 students were enrolled in non-credit courses. First Nations students made up 37 percent of full-time students and 21 percent of part-time students. Approximately one-third of all credit students are male, and the median age of all credit students was 28 years (27 years old for full-time, and 30 years old for part-time).

Yukon College awarded 165 certificates, 45 diplomas, and 17 degrees in 2015. The table below shows the number of course enrolments by full-time and part-time students enrolled in credit and non-credit courses.

Table 4. Yukon College Student Enrolment by Program Area, 2014-2015

Program Cluster	Full-time	Part-time	Total
University Transfer	200	232	432
Degree and Post-Graduate Programs	56	49	105
Career and Technical	147	142	289
Trades	45	16	61
Academic and Skill Development	237	87	324
Total Credit Programming	685	526	1,211
Total Non-credit Programming	176	3,996	4,172
Total Programming	861	4,522	5,383

Source: Yukon College

The next table shows the number of students enrolled in these schools in credit programs in 2014-2015, by age, gender, and Aboriginal status. Appendix 1 provides more detailed demographic information about Yukon College students and enrolment.

Table 5. Yukon College School Enrolment, by Gender, Age, and Aboriginal Status, 2014-2015

School/Division	# of Female Students	# of Male Students	Total Students	% Aboriginal	Average Student Age
School of Academic and Skill Development	194	117	311	56%	31.6
School of Health, Education and Human Services	168	21	189	23%	33.1
School of Management, Tourism and Hospitality	147	64	211	36%	33.4
School of Liberal Arts	190	99	289	20%	29.1
School of Science	39	43	82	21%	28.8
School of Trades Technology and Mining/Trades/CNIM	15	57	72	31%	27.4
Total	753	401	1,154	34%	31.0

Note: Total students (1,154) differs slightly from total students in Table 3 (1,211) because not all students identified a gender.

Educational Aspirations

According to a 2014 student survey, four of five Yukon College students intend to graduate with a certificate, diploma, degree, or trades designation, and nearly two-thirds aspire to a Bachelor's degree or higher. Approximately half intend to transfer Yukon College credits to another postsecondary institution, particularly students in science and technology programs.

College Governance

Board of Governors

Twelve members are appointed to the Yukon College Board of Governors, including the President and Vice Chancellor, a non-voting member. The role of the Board of Governors is to set and govern the College's mission and strategic plan.

First Nations Initiatives (FNI)

The First Nations Initiatives (FNI) department works within the Yukon College President's Office to integrate understanding and awareness of First Nations culture, tradition and history into Yukon College programming and associated curriculum and to enhance and develop First Nations partnerships. FNI also coordinates the President's Advisory Council on First Nations Initiatives (PACFNI).

President's Advisory Committee on First Nations Initiatives (PACFNI)

PACFNI provides strategic direction to Yukon College through the Board of Governors and the senior management team in order to increase the effectiveness of programs and services for all students. The committee expressly includes First Nations perspectives and views in assessing institutional and program quality and provides assistance to integrate an understanding and awareness of the culture, traditions, and

history of Yukon First Nations. PACFNI also encourages and supports involvement of First Nations within Yukon College.

Academic Council

The 15-member Academic Council deals with academic matters and upholds the academic integrity of programs. The Council determines and regulates policies on admissions and registrations, terminations and withdrawals, recognition of credits (transfer, etc.), curriculum content, student academic conduct, graduation requirements, and awards recognizing academic excellence. The members represent different areas of the College, including instructors, deans, chairs of schools, registrar, and directors.

Centres and Institutes

Yukon Research Centre

The Yukon Research Centre (YRC) has antecedents dating back to 1989 but was established in its current form in 2009. It works in partnership with industry, government, entrepreneurs, First Nations, and communities to improve the lives of Northerners. The Centre fosters collaborative research, innovation and scientific outreach in five major areas:

1. Climate Change, with a focus on adaptation.
2. Cold Climate Innovation, focusing on development, commercialization, and export of sustainable cold climate technologies and related solutions for subarctic regions.
3. Natural Science, including biology, geology, geophysics, biodiversity, water and hydrology.
4. Social Science, for example community, social economy and traditional knowledge research.
5. Technology Innovation, including alternative energy, building construction, commercialization, food security, information technology, and mechanical innovation.

YRC provides opportunities for students, faculty and community members to participate in a wide variety of research projects. The Research Centre also supports visiting researchers by providing laboratory and other project space, a residence for researchers, and logistical support during their activities in Yukon. YRC supports the thematic areas above through the six key programs described below.

BIODIVERSITY MONITORING

A long-term program that tracks populations and key ecosystems throughout Yukon and maintains longitudinal data to identify, understand, and address factors adversely affecting key species and wetlands systems as a whole.

COLD CLIMATE INNOVATION

This initiative supports the partnership between applied scientific research, industry and government in order to promote solutions to cold climate issues affecting northerners. It includes projects in alternative

energy, building construction, climate research, environmental remediation, food security, and mechanical innovation.

NORTHERN CLIMATE EXCHANGE

The Northern Climate ExChange was started in 2000 to focus on the study of climate change in Yukon by:

- Promoting and conducting research on impacts and adaptations in Canada's North.
- Coordinating the exchange of scientific and local knowledge and expertise.
- Providing mainstreaming and decision-making support, policy alternatives, and climate change education.

NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL (NSERC) INDUSTRIAL RESEARCH CHAIR IN MINE LIFE CYCLE

Yukon College and four mining partners created the chair to develop research leadership around northern specific challenges and opportunities facing the mining industry. Projects include bioremediation in cold climates, brackish water treatment in northern Yukon, fish otolith chemistry for environmental assessments, metal uptake in northern constructed wetlands, and mine site sequestration with leonardite.

RESOURCES AND SUSTAINABLE DEVELOPMENT IN THE ARCTIC (ReSDA)

This project, established in 2012, seeks to create new research networks of researchers from a wide range of organizations, including communities, government, and the private and non-profit sector. The four main research themes of the ReSDA include:

1. Sustainable Regions
2. Sustainable Communities
3. Sustainable Cultures
4. Sustainable Environments

TECHNOLOGY INNOVATION

Technology Innovation assists in a wide variety of projects to develop commercial products and services that contribute to social and economic prosperity in Yukon. Topics range from software development to mechanical engineering, and Yukon College's role is to create a bridge between innovators and the application of new technologies.

Centre for Northern Innovation in Mining (CNIM)

The Centre for Northern Innovation in Mining (CNIM) was designed to provide comprehensive training designed so that students can pursue their entire mining career within Yukon. Its portable training facility can bring instructors, equipment and materials to any community on the road system. CNIM was developed with support from the College, the Yukon Research Centre, private sector mining industry,

Government of Canada, Government of Yukon, and First Nations. Training includes geological technology, heavy equipment mechanic, environmental monitoring, rotary air drill, and underground mining.

Northern Institute of Social Justice (NISJ)

The Northern Institute of Social Justice (NISJ) opened in January 2010 to provide training and education for jobs with a social justice component related to public and First Nation governments, non-governmental organizations, and businesses.

Publications

Yukon College produces three main publications.

YOUR YUKON

This online column is coordinated by the Yukon Research Centre (YRC) at Yukon College, with major financial support from Environment Yukon and YRC. Articles are published biweekly in the Friday edition of the Yukon News.

NORTHERN REVIEW

The *Northern Review* is a multidisciplinary journal exploring human experience in the Circumpolar North. Published by the School of Liberal Arts. It is the only peer-reviewed journal in Canada devoted exclusively to northern issues and published north of 60 degrees latitude. Since 1988, articles have covered a broad range of topics in the social sciences & humanities. The journal usually publishes two issues a year.

CLIMATE CHANGE UPDATE

Climate Change Update, previously known as the *NCE Update*, provides bi-weekly updates on the latest climate change news and announcements. Each *Update* contains recent journal publications and news articles from national and international sources.

Revenues and Expenditures

Yukon College's total revenues for 2014-2015 were approximately \$46 million, of which 49 percent (or \$22.8 million) are Government of Yukon operating contributions. Another 38 percent (or \$17.6 million) of total revenue comes from third party funded projects and programs, as well as fees collected for training and non-credit courses. Yukon College enters into contracts with the Departments of the Government of Yukon (valued at \$9.5 million).

The Government of Yukon and the Canadian Northern Economic Development Agency (CANNOR) are also providing funds to the College for the purpose of constructing and operating the Centre for Northern Innovation in Mining (CNIM). About \$8.3 million is split evenly between the Government of Yukon and CANNOR over the next three years to construct a building to house the CNIM program.

About 3 percent (or \$1.2 million) in revenue comes from tuition and registration fees. The table below provides a breakout of 2014-2015 revenue sources.

Table 6. Yukon College Sources of Revenue, 2015

Revenue Source	Amount	% of Total
Contributions, Government of Yukon	22,765,979	49.4%
Contracts	17,565,618	38.1
Miscellaneous	1,996,563	4.3
Sales, rentals and services	1,706,809	3.7
Tuition and registration fees	1,217,988	2.6
Student assistance and scholarships	799,553	1.7
Total	46,052,510	100.0%

Source: Yukon College 2014-2015 Annual Report

Total expenditures were nearly \$47 million, of which 34 percent (or \$15.9 million) went to direct instruction costs (such as salaries, wages, and benefits paid to instructors) with another 21 percent (\$10 million) in direct instructional support (such as equipment, curriculum, etc.) costs. The general administration costs were 16 percent (\$7.5 million) of total expenditures. The table below provides a breakout of 2014-2015 expenditures.

Table 7. Yukon College Major Expenditure Categories, 2015

Expenditure	Amount	% of Total
Direct instruction	15,923,136	33.9%
Direct instructional support	9,972,985	21.2
General administration	7,513,203	16.0
Research	4,378,370	9.3
Services received without charge	3,731,685	8.0
Cost of sales	1,936,996	4.1
Facility services and utilities	1,411,012	3.0
Student assistance/scholarships	799,553	1.7
Miscellaneous	1,266,049	2.7
Total	46,932,989	100.0%

Source: Yukon College 2014-2015 Annual Report

Economic Impact of Yukon College

Yukon College impacts the region's economy in many different ways. Perhaps most important is the role the College plays in providing opportunities for residents to enhance their own earning opportunities through education and achieve a higher standard of living than would be possible without the College. The College's economic impact also includes its role in providing a more skilled and better educated workforce for local employers. Yukon College has a more direct economic impact stemming from the jobs and wages it creates and from its purchases of goods and services. In this regard, the College is an economic engine in its own right, with a full spectrum of direct, indirect and induced economic impacts.

Yukon College's Direct Economic Footprint

Yukon College's total direct spending is equal to spending on employment and wages plus spending on goods and services. During the 2014-2015 operating year considered in this study, the College spent 27.3 million on employment and wages and \$15.7 million on goods and services for a total direct impact of \$43 million.

Employment and Wages

During 2014-2015, Yukon College paid wages to 630 workers, including 276 permanent and term employees and another 354 employed in a casual (temporary or occasional) capacity. As expected, given that 75 percent of Yukon's population resides in Whitehorse, most permanent and term employees are located in Whitehorse. Whitehorse is home for 228 (91 percent) of Yukon College's permanent and term employees and 212 (60 percent) of Yukon College's casual employees.

The other 9 percent of Yukon College's permanent and term employees and 40 percent of Yukon College's casual employees are dispersed across the territory at 11 community campuses.

Yukon College had total labour-related costs of \$27.3 million in 2014-2015, including a total of \$22.2 million in wages, according to Yukon College human resource data. These wages included \$17.7 million paid to permanent and term employees in Whitehorse and \$2.4 million paid to casual employees located in Whitehorse.

In 2014-2015, \$1.6 million in wages were paid to permanent and term employees located in Yukon's rural communities. Another \$0.4 million in wages was paid to casual employees in rural areas. The distribution of Yukon College employment across the territory is described later in this chapter.

Spending on Goods and Services

In addition to \$27.3 million in labour-related expenditures, Yukon College spent approximately \$15.7 million on goods and services in support of its operations in 2014-2015. This spending was distributed

across more than 1,000 different businesses, agencies and other entities in Yukon, and approximately 450 organizations outside the territory. As this spending circulates through the economy, it creates additional employment and wages. This “multiplier effect” is described in more detail below.

Multiplier Effects

To illustrate the full contribution of Yukon College to the Yukon economy, multiplier analysis was performed using input/output multipliers for the Yukon published by Statistics Canada. Multipliers for 2010 were applied to aggregate expenditures extracted from Yukon College general ledger accounts for the 2014-2015 school year. The year 2010 is the most recent year for which multipliers are available from Statistics Canada.

Multipliers were also applied to estimates of spending by a) visiting scholars, presenters and collaborators, b) friends and relatives visiting students and c) off-campus expenditures made by out-of-territory students. Expenditure estimates for Yukon College visitors were derived from data gathered in the Yukon Visitor Exit Tracking Program 2012-13 and adjusted for inflation. Expenditure estimates for off-campus expenditures made by out-of-territory students were estimated using an online university cost calculator (available at getsmarteraboutmoney.ca). The online university cost calculator makes use of data from Statistics Canada’s *Survey of Tuition and Living Accommodation Costs 2014-15*.

Statistics Canada multipliers are available at several levels of aggregation. In 2014, Yukon’s Gross Domestic Product accounted for 0.13 percent of Canada’s total Gross Domestic Product. In such a small economy, multipliers specific to a particular industry are often not available due to confidentiality or measurement concerns. The usual approach is to disaggregate the expenditure data into industry-specific categories and then apply less granular multipliers.

For the purposes of this study, however, a multiplier specific to Yukon College activities is available from Statistics Canada at the most detailed level possible (Industry No. 225 – Community Colleges and C.E.G.E.P.s). As a result, multipliers were applied to total Yukon College expenditures for the 2014-2015 school year. Economic effects of visitor spending and off-campus expenditures made by out-of-territory students were estimated by applying multipliers for the accommodation and food, transportation and retail trade industries to estimates of spending for each of those industries. Effects across the economy were then aggregated.

Results of Multiplier Analysis

The results of the multiplier analysis are presented in the tables below. The economic effects of Yukon College spending within the Yukon have been estimated at direct, indirect, and induced levels for six different economic aspects: output, gross domestic product, full time equivalent employment, labour income, taxes on products and taxes on production.

Direct effects include jobs at Yukon College, the wages paid to employees, and non-personnel spending in support of its operations.

Indirect effects arise from the associated changes in activity experienced by businesses that supply goods and services to the College.

Induced effects are changes in economic activity generated when College employees spend their wages.

Table 8. Direct Yukon College Spending – Multiplier Effects in Yukon 2014-2015

Type of Multiplier	Direct	Indirect and Induced	Total (Direct, Indirect and Induced)
Output	\$43.0 million	\$18.1 million	\$61.1 million
GDP	\$26.0 million	\$11.8 million	\$37.8 million
Employment (FTE)	449	84	533
Labour Income	\$22.2 million	\$5.0 million	\$27.2 million
Taxes on products	\$0.14 million	\$0.14 million	\$0.28 million
Taxes on production	\$0.19 million	\$0.53 million	\$0.72 million

As illustrated in the table of economic output associated with direct Yukon College spending was valued at \$43.0 million in 2014-2015. Economic output is the total dollar value of services delivered by Yukon College. With indirect and induced effects added in, the total output associated with Yukon College spending was valued at \$61.1 million in 2014-2015.

The direct impacts on Yukon Gross Domestic Product (measured at basic prices) from Yukon College expenditures totaled \$26.0 million in 2014-2015. GDP is the incremental value created in the Yukon economy through the delivery of educational services by Yukon College. With indirect and induced impacts added in, the total impact on Yukon GDP was \$37.8 million in 2014-2015.

Statistics Canada multipliers can also be used to estimate the level of full-time equivalent (FTE) employment associated with a given level of industry spending. Total direct employment corresponding to direct spending by Yukon College in 2014-2015 was estimated at 449 FTEs. An additional 84 FTEs of indirect and induced employment were generated in 2014-2015. As noted above, direct wages totaled \$22.2 million. Total labour income associated with the 533 FTEs of direct, indirect and induced employment was \$27.2 million.

Taxes on services provided by Yukon College were estimated at \$0.3 million in 2014-2015. Total taxes on production were also estimated at \$0.7 million in 2014-2015.

Table 9. Additional Yukon College Spending – Multiplier Effects in Yukon 2014-2015

Type of Multiplier	Direct	Indirect and Induced	Total (Direct, Indirect and Induced)
Output	\$774,000	\$300,000	\$1,075,000
GDP	\$405,000	\$193,000	\$598,000
Employment (FTE)	7	1	8
Labour Income	\$294,000	\$85,000	\$379,000
Taxes on products	\$21,000	\$2,000	\$23,000
Taxes on production	\$15,000	\$8,000	\$22,000

As illustrated in the table, economic output associated with additional Yukon College spending (spending by a) visiting scholars, presenters and collaborators, b) friends and relatives visiting students and c) off-campus expenditures made by out-of-territory students) was valued at \$0.8 million in 2014-2015. With indirect and induced effects added in, the total output associated with additional Yukon College spending was valued at \$1.1 million in 2014-2015.

The direct impacts on Yukon Gross Domestic Products (measured at basic prices) from these additional Yukon College expenditures totaled \$0.4 million in 2014-2015. GDP is the incremental value created in the Yukon economy through the delivery of educational services by Yukon College. With indirect and induced impacts added in, the total impact on Yukon GDP was \$0.6 million in 2014-2015.

Direct employment corresponding to the additional spending by Yukon College in 2014-2015 was estimated at 7 FTEs. An additional 1 FTE of indirect and induced employment were generated in 2014-2015. Direct labour income associated with the 7 FTEs of direct employment was estimated to be \$0.3 million. Total labour income associated with the 8 FTEs of direct, indirect and induced employment was \$0.4 million.

Taxes on services provided by Yukon College were estimated at \$23,000 in 2014-2015. Total taxes on production were estimated at \$22,000 in 2014-2015.

Table 10. Total Yukon College-Related Spending – Multiplier Effects in Yukon 2014-2015

Type of Multiplier	Direct	Indirect and Induced	Total (Direct, Indirect and Induced)
Output	\$43.8 million	\$18.4 million	\$62.2 million
GDP	\$26.4 million	\$12.0 million	\$38.4 million
Employment (FTE)	456	86	542
Labour Income	\$22.5 million	\$5.1 million	\$27.6 million
Taxes on products	\$0.16 million	\$0.14 million	\$0.30 million
Taxes on production	\$0.21 million	\$0.54 million	\$0.75 million

As illustrated in the table, economic output associated with total Yukon College spending (direct spending and additional spending) was valued at \$43.8 million in 2014-2015. With indirect and induced effects

added in, the total output associated with all Yukon College spending was valued at \$62.2 million in 2014-2015.

The direct impacts on Yukon Gross Domestic Product (measured at basic prices) from total Yukon College expenditures were estimated to be \$26.4 million in 2014-2015. With indirect and induced impacts added in, the total impact on Yukon GDP was \$38.4 million in 2014-2015.

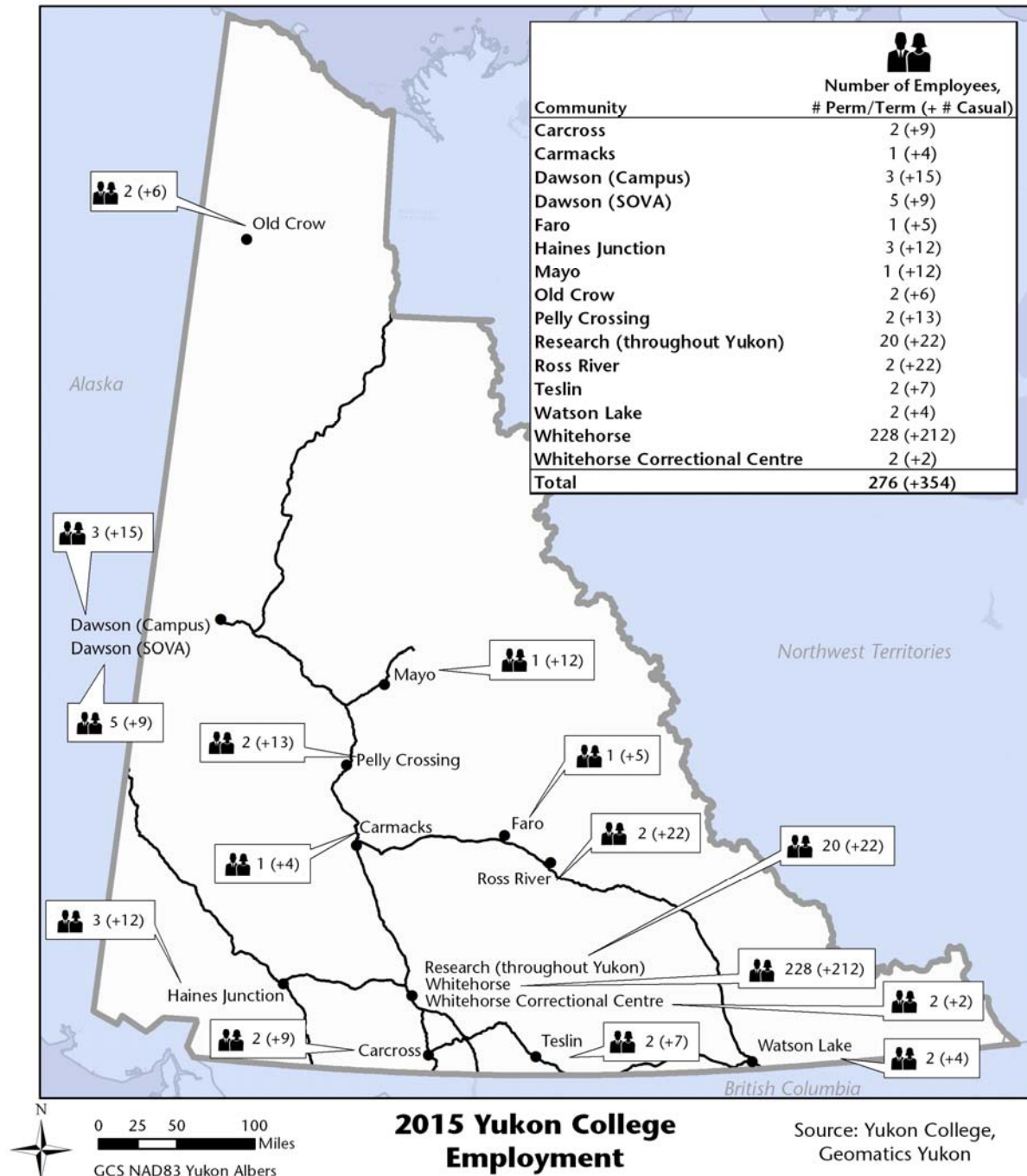
Total direct employment corresponding to total spending by Yukon College in 2014-2015 was estimated at 456 FTEs. An additional 86 FTEs of indirect and induced employment were generated in 2014-2015. Direct labour income associated with the 456 FTEs of direct employment was estimated to be \$22.5 million. Total labour income associated with the 542 FTEs of direct, indirect and induced employment was \$27.6 million.

Total taxes on services provided by Yukon College were estimated at \$0.3 million in 2014-2015. Total taxes on production were estimated at \$0.75 million in 2014-2015.

Yukon College Employment Distribution

As illustrated in the map below, Yukon College has an extensive reach into Yukon communities, providing stable year-round employment in micro-economies that rely heavily on seasonal and variable resource sector employment.

Distribution of Yukon College Employees throughout Yukon, 2015



Broader Socioeconomic Impacts of Yukon College

Yukon College plays a role in virtually every aspect of Yukon life. As an educational institution, it serves students whose personal goals include staying and growing in Yukon, accessing educational resources outside Yukon and returning to the territory, and preparing for paths whose ends may not even be imagined. As a workforce development asset the College prepares students for employment in hundreds of occupations, including many that are fundamental to health and wellbeing. As a research centre, it supports new knowledge and technical solutions to address core issues in the relationships between human beings and their environment. As a cultural resource, it provides a foundation for personal enrichment and social justice. Finally, the College is a portal to the broader world, both within and beyond Yukon, for anyone, at any level, who has aspirations there.

Because they are so broad and complex, describing, cataloging, and quantifying the full range of Yukon College's socioeconomic impacts would be an endless task. In this report, we use information provided by students and Yukon residents and data provided by the College, Yukon Bureau of Statistics, and the academic literature to focus on several areas that are commonly recognized as useful indicators of complex socioeconomic outcomes.

The first section of this chapter presents descriptions of Yukon College's socioeconomic impacts in the words of students and residents who were interviewed or who participated in discussion groups for this study. The next section presents selected results of student surveys regularly conducted by Yukon College. The third section addresses several key areas of impact, including impacts on employment and wages, benefits from workforce development, Yukon College research activities, and effects on territorial and First Nations governance. Finally, we discuss the benefits of place-based education and access to an educational continuum as represented by the 13 Yukon College campuses.

Impacts Identified by Yukon Residents

The interviews with Yukon residents and the community and student discussion groups conducted for this study highlighted many of the broader benefits Yukon realizes from Yukon College. Following are some major themes, brief summaries, and *quotations* from that research.

Yukon College is a valued institution that addresses multiple needs.

Yukon College is valued by residents throughout the region. The College is credited with enhancing quality of life, providing a high quality learning experience, and tailoring programs to meet the unique needs of Yukon residents. Yukon College's proximity, through its multiple campuses, to the communities and students it supports is important.

The College also prepares students for work in First Nations and territorial governance, health care, teaching, and myriad other needed professions.

Residents said the role of the community campuses as sources of training in vocational, academic, and life-skills is vital. Further, the community campuses are key social and economic anchors within the fabric of rural communities. For example, the School of Visual Arts (SoVA) was described as a major asset for Dawson City.

Quality of life is definitely enhanced by the College. It promotes life-long learning and creates qualified employees.

The College has an extremely long history of being accomplished at distance education.

It is a distinguished research centre and producer of graduates that will be of immediate use for a lot of students are more comfortable in Whitehorse than in Calgary or Edmonton.

They (the College) recognize barriers Yukon students face and are willing to work with the private sector to get around those.

All of it is important. We need the trades, degree programs, health, teachers, criminology...

The satellite campuses play a pivotal role in providing basic adult education.

The College has been a major centre for adult-based education in small communities. Adults finishing high school, updating their degrees.

First Nations depend on the college and have been well served in most respects.

The First Nations governance programs offered by Yukon College are commonly regarded as excellent. The College has also helped First Nations citizens become employed in health care, social services, and justice occupations, among many others.

First Nations governance is really starting to come together. We are training our future leaders on land claims, financial management, and strategic planning.

First Nations governance programs at the College are on the mark now. They are really top notch. I have looked really closely at what is offered other places.

We utilize both the academic programs, such as accounting, and the trades. We fully fund education for a number of our members. The primary demand is in upgrading, but we do have students enrolled in postsecondary education programs.

Yukon College is a leader in northern issues and industries.

Residents expressed widespread appreciation of the College's research and training programs for helping students and organizations gain and apply knowledge that is specific to Yukon industries, opportunities, and issues.

Yukon College's research programs are huge in some areas. Mining is a good example. The underground training program is great.

A research program that is ongoing in Carcross is a winterized greenhouse. The College is providing technical expertise and mentorship on design and construction.

The College has awesome research capabilities. You want to hire people from the north to talk about the northern experience.

Research examples that take advantage of our climate and location include permafrost research, conversion of plastic to oil, and greenhouse projects.

They attract PhD students from all over the world for Arctic research. They are top tier students. Yukon residents and students have the opportunity to interact with them.

The garden shows how biology and science really matter. The science lab is important.

The power project we did with Cold Climate Innovation saved so much money that we commercialized it. It is now being used across Canada.

College cultural programs are important on several fronts.

First Nations students benefit from celebrating and sharing their language and culture. Other students and faculty from both inside and outside Yukon gain a deeper understanding of Yukon culture and values.

The College is a celebration of history and culture – not only for First Nations students – but for everyone.

Yukon College has important educational and cultural benefits for our citizens. The cultural programs are good, and more Native art and educational programs are being incorporated.

We need to offer programs that reflect on how First Nations people live today, yesterday, and can live in the future. If we want students to succeed, we need to acknowledge their heritage.

Yukon College is rich with First Nations culture. They really make that a forefront of what they are doing. Students really appreciate it.

Ideally, (cultural programming) would flow through the entire educational experience so people have a strong sense of self-awareness and identity.

Student Survey Highlights

Yukon College conducts annual surveys of exiting and returning students. The surveys cover a range of topics used to inform administrative decision-making. For purposes of this study, the key findings of the surveys are those relevant to 1) student satisfaction with their educational experiences at the College, 2) student educational aspirations and 3) relevance of Yukon College educational experiences to student employment. Highlights of those data are presented below. General conclusions are that:

- The vast majority of students are very satisfied with their courses and educational experiences at Yukon College.
- Students represent a broad range of past educational attainment and carry high aspirations for the future.
- Most students say their Yukon College education thus far has improved their employment situation. However, the data is not detailed enough, nor the time span long enough, to quantify impacts on student employment and wages using this information alone.

Survey of Exiting Students

Yukon College performs an annual exit survey of recent students. Students who attended in 2013-2014 were surveyed in March and April of 2015. Of 214 students targeted, 96 completed interviews. One-third were First Nations and another 10 percent said they were part of a “visible minority group” other than First Nations. With respect to Yukon College’s impacts on communities and residents of Yukon, key findings of the student exit survey include:

- More than 90 percent of respondents said the quality of the courses they took at Yukon College was “excellent” (53 percent) or good (38 percent), and 95 percent were either “very satisfied” or “satisfied” with their education at Yukon College.
- Of those currently enrolled at other postsecondary institutions (15 of the 96 respondents), all were either “very satisfied” or “satisfied” with the credit-transfer process, and all said they felt “very well” or “adequately” prepared for their ongoing studies.
- 25 percent had applied to another postsecondary institution since they attended Yukon College in 2013-2014. Of those, 83 percent had been accepted and the remaining 17 percent had not received a response yet. Three quarters of those who had been accepted were enrolled at that institution.
- Three quarters of respondents said they were employed, and two-thirds of those said their jobs were “permanent, year-round.” Of those currently employed, two thirds said their work was “directly related” to their studies at Yukon College, and another 18 percent said it was “somewhat related.” Of those employed, 82 percent said they felt “very well” (60 percent) or “adequately” (22 percent) prepared for the work.

- Eight of ten working respondents said they work 35 hours a week or more, and three-quarters said their employment or job security had improved because of their studies at Yukon College.

Survey of Returning Students

Yukon College also surveys its returning students each year. In fall 2014, 328 students, or 37 percent of students who registered for fall courses, responded to the survey. Findings especially relevant to the College's community and resident impacts include:

- Students said the College is doing an excellent job. Nearly all respondents, 97 percent, said they were satisfied with the quality of instruction at Yukon College and 96 percent agreed that the College is a good learning environment. Nearly the same proportion, 93 percent, said they would recommend their current program or courses to others interested in the same field.
- Students said Yukon College is culturally attuned. More than nine of ten respondents (93 percent) said Yukon College provides an environment of cultural sensitivity.
- Students at all academic levels use Yukon College. One-third of respondents said they already had postsecondary credentials, including 12 percent who had university degrees. Another 22 percent had some previous educational experience at the College or university level.
- Yukon College students have high educational goals. Nearly two-thirds (64 percent) of respondents said they aspire to achieve a bachelor's or higher degree in the future. Another 31 percent hope to earn a certificate, diploma, or a journey person trades designation.

Key Indicators for Social Returns from Yukon College

The benefits to society of higher education have been widely researched, and many were mentioned in the interviews and discussion groups. Key indicators for those benefits include:

- Increased personal income and the health benefits and reductions in use of social programs associated with that increased income.
- Increased economic activity from workforce development.
- Benefits from academic and applied research, including knowledge, saleable assets such as patents, and technologies applied in the private and public sectors.
- Increased personal satisfaction and quality of life.

Yukon College also creates social returns in areas that are specific to Yukon, for example:

- Improved access to a continuum of education through the 13 campuses.
- Place-based education, including specific programs to meet the needs of First Nations and other residents of the rural North.

Each of these socioeconomic benefits is discussed below.

Impacts of Education on Employment and Wages

It has been firmly established in Canada that educational attainment is associated with greater lifetime earnings.⁴ In addition to increased lifetime earnings, those with college certificates and degrees experience fewer layoffs and more years of coverage in pension plans.⁵

Individuals with higher educational attainment also have higher rates of employment.⁶ Employment rates are highest (86.4 percent) for Yukon residents with a university certificate, diploma or degree, and lowest (61.1 percent) for those with less than a secondary school diploma or equivalent. Yukon residents with only a high school diploma (or equivalent) have an employment rate of 79.6 percent. Those with an apprenticeship or trades certificate and those with a college or other non-university certificate have approximately the same employment rates as those with only a high school degree at 78.0 percent and 78.9 percent respectively.⁷

Finally, the earnings premium for educational attainment has increased over time.⁸ A Canadian study determined that the wage premium for postsecondary graduates employed in their field of study is 18 percent.⁹ (Two-thirds of exiting Yukon College students who are employed, and who completed the survey, said their work is directly related to their course of study at the College.)

Most studies that include quantitative estimates of increased earnings due to postsecondary education have focused on the effects of 4-year degrees. However, Statistics Canada has published analyses that provide a basis for estimating the wage impacts of Yukon College degrees and certificates. The most detailed and recent of these is published in *An Investment of a Lifetime? The Long-term Labour Market Premiums Associated with Postsecondary Education*, Statistics Canada, 2014. The study tracks actual compensation for a cohort of workers over a 20-year period (1991–2010). Estimates of Yukon College total compensation premiums using these Statistics Canada assumptions are presented below.

⁴*Degrees of Success: The Payoff to Higher Education in Canada*, Tal and Enenajor, 2013

⁵*An Investment of a Lifetime? The Long-term Labour Market Premiums Associated with a Postsecondary Education*, Frenette 2014

⁶"Why Access Matters" Revisited, A Review of the Latest Research, Berger 2008

⁷ Statistics Canada, May 2011

⁸*The Value of Higher Education: Individual and Societal Benefits*, Hill and Hoffman 2013

⁹ *Education and Early Labour Market Outcomes in Canada*, Hansen 2007

ESTIMATE OF TOTAL COMPENSATION PREMIUMS ASSOCIATED WITH YUKON COLLEGE DEGREES AND CERTIFICATES

In the past three years, Yukon College has awarded an average of 17 program degrees and 169 diplomas and certificates each year. A program degree is a 4-year academic (BA or BSc) degree, with the exception of the Masters of Public Administration, which is offered entirely online through the University of Alaska. The College currently offers five degree programs, typically in partnership with one or more universities. Some involve a combination of Yukon College courses, online courses and courses at other institutions. The Bachelor of Education is awarded by Regina University, but all coursework is completed at Yukon College. Diplomas represent the equivalent of two years of full-time, credit study, and certificates are typically one year of credit study.

Because the three credentials represent very different fields of study and subsequent labour force pathways, simplifying assumptions were made for this calculation:

- All degrees are assumed to be 4-year bachelor degrees and all are assumed to have the same labour-force value, even though returns on college degrees can vary substantially depending on the field of study and many other factors.
- Certificates and diplomas are combined and treated as “college certificates” under the methodology outlined for the Statistics Canada study. This is again because the available data do not support differentiating credentials at a more detailed level for a relatively small sample, and is supported by the fact that other Statistics Canada data assign relatively similar values to trade/apprenticeship credentials and college diplomas.¹⁰

The Statistics Canada analysis arrives at a total-compensation “lifetime” difference in constant 2010 dollars between a bachelor’s degree and graduation from high school of \$488,000 for men and \$296,000 for women, assuming a 20-year period of returns. It calculates the total value of a diploma/certificate over graduation from high school at \$166,000 for men and \$121,000 for women. The differences by gender reflect the wage gap between men and women and also capture factors such as time away from work.

These results include an adjustment, based on regression analysis, to account for differences in parental education and cognitive skills among workers as measured by the Adult Literacy and Skills Survey. The results are based on national, rather than Yukon, employment data and should therefore be used as a general guide. It is also important to remember that these figures do not predict the earning power of any particular student. Finally, note that the compensation premium does not consider the costs, either direct—for example fees and materials—or indirect—for example transportation and foregone wages—of attending a postsecondary institution.

The results suggest the average annual number of degrees awarded by Yukon College confer a total-compensation premium of approximately \$6.1 million over a 20-year period on the 17 students who receive them. They also suggest that the average annual number of diplomas and certificates confer a total-compensation premium of \$23 million over 20 years on their 169 recipients. These calculations are

¹⁰ *The Value of a Degree: Education, Employment and Earnings in Canada*, Berger and Parkin, 2006

weighted by gender to reflect the fact that the composition of the Yukon College student body is roughly one-third male and two-thirds female.

These compensation-premium estimates also do not address increases in income that may accrue to Yukon College students from apprenticeships or from skills obtained in non-credit courses.

OTHER EMPLOYMENT BENEFITS

Yukon College students also benefit to greater or lesser degree from other outcomes associated with education. For example, individuals with some postsecondary education have incarceration rates that are one-quarter of those for people with a high school degree.¹¹ Because of their greater income, they experience better health, not just for themselves, but for their families.¹² University graduates are also less likely to experience poverty¹³ or to rely on public assistance programs.¹⁴ Educational benefits are also “intergenerational.” The children of more highly educated parents typically have increased cognitive skills and are more likely to become highly educated themselves.

Finally, transition to a university could mean higher wages for everyone. A U.S. study calculated that a 1 percent increase in the labour force share of university graduates results in a 0.4 percent increase in wages for university graduates. However, the study also found that the presence of those graduates creates even larger increases in wages for other workers, 1.6 percent for workers who have finished high school and 1.9 percent for those who have not finished high school.¹⁵

Workforce Development Benefits

Interviews and discussion groups conducted for this study make clear that training through Yukon College contributes to nearly every aspect of Yukon’s workforce. In addition to the major, ongoing workforce initiatives described below, the research indicates that a significant proportion of Yukon residents with bachelor’s degrees and higher have taken one or more courses at the College. This is supported by the fact that 12 percent of 2014 returning students who were surveyed reported having university degrees.

Yukon College produces several kinds of workforce benefits, including the following:

- Replacement workers to fill the jobs of retiring older workers.
- New and retrained workers to support evolving business strategies and industries.
- Productivity gains when workers are trained to use more sophisticated equipment and techniques in their current jobs.

¹¹ *Education Pays, The Benefits of Higher Education*, Baum et al. 2013.

¹² *The Value of Higher Education: Individual and Societal Benefits*, Hill et al. 2005

¹³ Op cit

¹⁴ *Investment in Education: Private and Public Returns*, United States Congress, 2000

¹⁵ *Estimating the social return to higher education: Evidence from longitudinal and repeated cross-sectional data*, Moretti, Journal of Econometrics, 2004

REPLACEMENT WORKERS

The report, *Why Access Matters" Revisited: A Review of the Latest Research* (2008) by the Canada Millennium Scholarship Foundation notes that as Canadian baby boomers retire the number of workers available to replace them will steadily diminish. Statistics Canada projects that by 2030 the number of workers available to replace each retiree will drop by approximately half from current levels. This means the labour force must become more productive and that means it is critical 1) to attract a higher proportion of Canadian youth to postsecondary education and 2) to ensure that they get the right kinds of training.

NEW AND RE-TRAINED WORKERS

Business growth requires a supply of workers with two kinds of skills. Yukon College trains students in both technical skills needed to perform a wide range of jobs and so-called "soft" skills, such as effective communication, teamwork, and critical thinking.

With respect to transition to a university, Statistics Canada and others predict that an increasing proportion of new jobs in Canada will require advanced education and training, the so-called "knowledge workforce." However, workforce demands are not geographically uniform (Berger 2008), and, as residents pointed out for this study, meeting the training needs of Yukon workers will require flexibility, responsiveness, and local input.

CONTINUING EDUCATION CREDITS

In 2014–2015, Yukon College offered 44 courses with continuing education credits and had more than 3,600 registrations in those courses. Courses covered topics from project management, accounting and bookkeeping, to computer skills, to CPR and First Aid, to industrial training such as Hazardous Materials, Rigging, and Welding. Roughly 2,000 course registrations were for some type of First Aid certification or re-certification.

PRODUCTIVITY GAINS

Yukon College is designed and equipped to bring state of the art skills to Yukon workers. Among the most visible initiatives in this regard are the Centre for Northern Innovation in Mining (CNIM) and the Northern Institute of Social Justice.

Centre for Northern Innovation in Mining (CNIM)

CNIM operates on joint funding from the Government of Yukon and the Canadian Northern Economic Development Agency (CANNOR). CNIM has demonstrated flexibility in addressing the needs of the mining industry and other industries with related skills. This is an area with many opportunities to increase the proportion of jobs held by Yukon residents. Since CNIM began operations in 2013, several students have become employed in mining, but with Minto the only underground mine currently operating in Yukon, graduates nevertheless enjoy excellent employment prospects in environmental monitoring, permitting, and remediation projects. CNIM also offers apprenticeship programs in construction and heavy equipment.

Access to apprenticeships in industrial trades is being introduced in rural communities, as well as in Whitehorse, using CNIM's mobile training facility.

CNIM plays an important role as a venue for constructive dialogue and relationships between Yukon First Nations and heavy industry. This includes training and employment opportunities that are informed by the holistic view of the environment embraced by First Nations.

Particularly in rural communities, CNIM courses can represent a next-step after adult basic education for people entering or returning to the workforce. For example, in Ross River, seven students passed initial courses and are working toward level-one apprenticeship exams. CNIM is providing extra support to prepare students for the examination process, with which they have little familiarity.

CNIM and the Yukon Research Centre (see section following) see opportunities to work together in the future. For example, linking research with training in the area of cold-climate construction can accelerate incorporation of the latest improvements in materials and techniques into Yukon's housing and infrastructure projects.

Northern Institute of Social Justice (NISJ)

NISJ helps strengthen communities by training workers, administrators, and other local residents to address health and human-services needs ranging from suicide intervention to fetal alcohol syndrome to arbitration. Students include frontline workers and supervisors, administrative tribunals and boards, health and education students, and the general public. Many of these workers are involved in delivering services through First Nations governments. Courses and programs are developed with a Yukon, or occasionally pan-northern context.

Research done in 2007 showed nearly 1,400 jobs in Yukon (8 percent of the labour force) with a component related to social justice. In addition to providing training to this sizeable workforce and career development opportunities to all residents, NISJ contributes directly to the efficiency and effectiveness of social institutions and agencies throughout Yukon. The table shows the courses offered by NISJ between April 2014 and March 2015, along with the number of registrations and the number of course completions. The list is notable for its breadth and also for the high percentage course completions (100 percent for nearly all courses). Many of these courses, for example Mental Health First Aid and Trauma Training, contribute to the effectiveness not just of social service workers, but of teachers, public safety and criminal justice personnel, and a range of other occupations.

Table 11. NISJ Training Delivery: April 1, 2014 – March 31, 2015

Courses	Location	Students Registering	Students Completing
YFN History and Cultures Training- RCMP	Whitehorse	15	15
Case Management for Correctional Officers- online	Online	19	17
Core Competencies for FASD	Pelly Crossing	2	2
Vicarious Trauma Training	RCMP	13	13
Mental Health First Aid (MHFA) for Northern People	Haines Junction	6	6
Individual Crisis Intervention and Peer Support	Whitehorse	9	9
Loss, Grief, and Healing for Frontline Workers	Whitehorse	22	22
MHFA - Basic (YC Staff)	Whitehorse	16	11
Applied Suicide Intervention Skills Training	Whitehorse	12	12
YFN History and Cultures Training- HSS	Whitehorse	17	17
Core Competencies for FASD	Whitehorse	3	3
Trauma Training, - Practical Nursing Program students & Health Care Assistant Program students, Yukon College	Whitehorse	29	29
MHFA for Northern People	Whitehorse	10	10
Core Competencies for FASD	Whitehorse	8	8
Vicarious Trauma and Compassion Fatigue	Whitehorse	10	10
FASD: Considerations for Practice	Whitehorse	63	63
FASD Certificate Program	Whitehorse	29	29
Individual Crisis intervention and Peer Support	Whitehorse	12	12
MHFA for Northern People	Dawson City	24	24
YFN History and Cultures Training- RCMP/HSS	Whitehorse	20	20
Living with Loss	Watson, Carmacks, Dawson, Whitehorse Online	6	6
MHFA for Northern People	Watson Lake	7	7
Applied Suicide Intervention Skills Training	Whitehorse	9	9
Loss Grief and Healing for Managers	Whitehorse	14	14
YFN History and Cultures Training- WCC	Whitehorse	18	18
YFN History and Cultures Training- WCC	Whitehorse	17	17
YFN History and Cultures Training- WCC	Whitehorse	19	19
Core Competencies for FASD	Whitehorse	6	6
Trauma Training	Whitehorse	3	3
Case Management for Correctional Officers- Online	Online	36	26
MHFA for Northern People- CYFN	Whitehorse	14	14
Trauma Training- CYFN	Whitehorse	19	19
YFN History and Cultures Training- H&SS	Whitehorse	17	17
Understanding Legislation	Whitehorse	26	26
Practice and Procedures for Decision Makers	Whitehorse	8	8
Advanced Decision Writing	Whitehorse	5	5

YFN History and Cultures Training- H&SS	Whitehorse	11	11
MHFA for Northern People	Pelly Crossing	15	15
YFN History and Cultures Training- H&SS	Whitehorse	16	16
Living with Loss	Pelly Crossing and Teslin	13	13
Trauma Training	Whitehorse	19	17
Individual Crisis Intervention and Peer Support- PCSS	Whitehorse	8	8
Survival Skills for the First Responder	Whitehorse	12	12
YFN 101	Whitehorse	19	19
MHFA for Northern People	Beaver Creek	12	12
MHFA for Northern People	Whitehorse	21	21
Core Competencies. for FASD	Whitehorse	20	20
Survival Skills for the First Responder	Dawson	14	14
Vicarious Trauma and Compassion Fatigue - RCMP	Whitehorse	11	11
YFN History and Cultures Training- RCMP	Whitehorse	15	15
Case Management for Correctional Officers- online	Online	19	17
Total		754	735

Source: Yukon College Data Warehouse

School of Visual Arts (SoVA)

By all accounts SoVA is already a major cultural asset for Dawson City, attracting students locally, nationally and internationally and offering block credit transfers to four universities for completion of a BFA degree. SoVA also hosts visiting artists, art events and a not-for-profit art gallery, all of which contribute to quality of life and economic vitality in the region.

OTHER KEY WORKFORCE DEVELOPMENT AT YUKON COLLEGE

The College may offer as many as 400 courses in any given year, and the large majority contributes to workforce effectiveness. Following are selected examples of courses or programs not covered above:

- Northern Sciences, Technologies, and Trades – The College specializes in skills for northern applications that range from chainsaw safety to alternative energy.
- Health Care and Teaching – Here again, the College not only trains workers but does so in the context of the unique demands of northern environments.
- First Nations Governance and Public Administration – These programs contribute directly to the wellbeing of all Yukon residents by making governing agencies more effective.
- Food and Beverage Operations – The program covers kitchen and dining room skills as well as restaurant management. Its graduates are a resource for Yukon's visitor and hospitality industry that is both valuable and rare in northern regions.

- Specific Training to Respond to Local Needs – For example, the College has developed courses to train local residents for jobs in active highway projects where employment is virtually assured.

Approximately one-quarter of Yukon College students who initially participate in Academic and Skill Development go on to enroll in credit postsecondary programming at the College within three years. (This is in addition to students who enroll at other postsecondary institutions.)

Of 5,385 credit course registrations and 7,850 non-credit registrations in 2014–2015, 4,372 credit registrations and 4,458 non-credit registrations were at the Ayamdigut Campus in Whitehorse. Another 560 credit courses and 86 non-credit courses were delivered online, known as “distributed learning”. The vast majority of course registrations at the community campuses are non-credit or distributed learning courses.

Table 12. Types of Course Offerings at Community Campuses 2014-2015

Campus	Career/ Trades	Other	PSE	Upgrading	Total
Carcross	6	4		3	13
Carmacks	11	2		2	15
Dawson	15	13	1	5	34
Faro	3	5			8
Haines Junction	16	6		5	27
Mayo	4	26		3	33
Old Crow		2		2	4
Pelly Crossing	5	13		6	24
Ross River	9	8		1	18
Teslin	11	3		2	16
Watson Lake	7	5	3	3	18
WCC	3	1		5	9
Total	90	88	4	37	219

Source: Yukon College Data Warehouse

The community campuses provide a wide range of programming, as illustrated by this list of courses offered in Haines Junction in 2013–2014.

Skills for Employment - Highways and Public Works	MATH 053
COMP 040	ENG 050
ACCT 001	ACCT 002
MATH 030 TUTOR	Standard First Aid - Level C CPR (10 deliveries)
Standard First Aid - Level C CPR Recert (5 deliveries)	Wilderness First Aid (5 deliveries)
Enform Chainsaw Competency	Silversmithing
WHMIS/TDG (2 deliveries)	Ground Disturbance Training
Defensive Driving	Basic Small Water Operating Systems
Airbrakes	Interview Skills
Rigging and Hoisting	Confined Space Awareness
Communication Skills	Personal Financial Planning
AED Training (9 deliveries)	Foodsafe (3 deliveries)
Babysitting	Level II Carpentry Exam Preparation

Community Campus courses also vary from community to community based on local needs and interest. In most cases, they are offered on a cost-recovery basis and therefore require a minimum number of students in order to be offered.

Benefits of Yukon College Research Activities

Applied research is the life-blood of business and industry, especially in the rapidly changing North. Academic and social science research drives the strategies behind government programs and, properly applied, makes them more effective and less costly. Research is particularly critical in view of the need to understand the changes occurring from climate change and to develop ways to respond, not just with respect to human infrastructure, but to address threats to ecosystems and the food security of peoples who have depended on the fauna and flora of the Arctic for thousands of years.

THEORETICAL IMPACTS OF RESEARCH INSTITUTIONS

Types of Impacts

Yukon College research activities are consistent with theoretical models for producing social benefits. The “Payback Framework,” a British system designed for health research, identifies five categories of benefits to society from research activities: knowledge; benefits to future research and research use; benefits from informing policy and product development; health and health sector benefits; and wider social and economic impacts (which include social or economic effects that change society, including impacts on public opinion).

According to the Canadian Academy of Health Sciences (CAHS) Impact Framework, applied and academic research produce societal benefits by the following process:

1. The primary outputs of research are increases in the pool of knowledge and additional consultation and collaboration.
2. These create secondary institutional/decision impacts in key societal sectors: industries, government, public use, and further research. For example, industries may produce new products and services, build new infrastructure, and improve the work environment; governments may alter resource allocation, policies and regulation or intervention programs and taxation schemes. Public use includes advocacy, media coverage, and general knowledge.
3. The secondary impacts improve societal conditions, including health and wellbeing and economic and cultural prosperity and equity by making services and living conditions more appropriate, accessible, effective, safe, etc. and by altering human behavior.

Characteristics of the Research Industry

Research activities have many desirable socioeconomic characteristics. Those listed below were identified in a recent study by the Institute for Social and Economic Research (ISER) at the University of Alaska, but are applicable to Yukon College. The two institutions share many of the same research interests.

- Labour Intensive — Research requires researchers, technicians, and local support. A large proportion of research budgets therefore are dedicated to personnel.
- Relatively High Wages — The average wage is higher than the economy-wide average.
- Year-Round Employment — Although some research jobs are seasonal or only for the academic year, most are year-round, and may offset the summer seasonal decline in teaching activity at most universities.
- Diverse Job Mix — The variety of research activities generates a diverse mix among the private sector jobs that depend on research spending.
- High Resident Job Share — Residents typically hold most of the jobs in university research.
- Flexible — Research can be conducted wherever there is a laboratory or proper field conditions with support for the scientists. It need not be located in proximity to resource deposits, as is the case for many northern industries, or close to markets, as for most services.
- Environmentally Friendly — University research is a clean industry with minimal effects on the quality of the environment.
- Local Purchases — Procurement of supplies and services associated with research activities typically creates community or regional economic impacts.
- Innovation Engines — Even when they are not directly associated with a new patent or venture, research findings feed society-wide innovation—from industry to social services—in both obvious and subtle ways.

Research Investment

Research attracts outside investment. In Canada, business enterprises typically supply about half the total annual research funding nationwide, \$14.6 billion of a total \$32 billion in 2013.

Table 13. Gross Domestic Expenditures on Research and Development
by Funding Sector (in \$millions)

	2009	2010	2011	2012	2013
Canada	30,129	30,555	31,834	32,707	31,972
Federal Government	5,951	6,467	6,220	6,054	6,186
Provincial Government	1,657	1,697	1,788	2,053	1,877
Business Enterprises	14,618	14,347	15,586	15,403	14,600
Higher Education	4,824	4,970	5,193	6,146	6,240
Private non-Profit	944	1,068	1,153	1,191	1,167
Foreign	2,131	2,001	1,891	1,854	1,897

Notes: The provincial distribution is collected only for actual expenditures.

Gross Domestic Expenditures on Research and Development (GERD) refers to all monies expended for R&D.

Sources: Statistics Canada, CANSIM, table [358-0001](#) and Catalogue no. [88-221-X](#).

YUKON COLLEGE RESEARCH ACTIVITIES

Research Objectives

Yukon College places a high priority on its role as a leading Northern research institution. YRC pursues five key objectives:

- Initiate research activity on strategic northern issues related to climate change and adaptation.
- Attract more research investment and activity to Yukon.
- Research will be both applied and basic yielding economic, environmental and social benefits to Yukon residents.
- Establish Yukon as a leader in climate change research.
- Ensure northerners benefit from the result of northern research and development.

Yukon Research Project Funding

Research spending by Yukon College in 2014-2015 was \$4.4 million. YRC reported more than 40 projects undertaken between April 2014 and March 2015, with outside, third-party funding totaling \$2,108,516. "Third party" funding is funding in addition to funds budgeted by the College to support YRC activities. It comes from a wide variety of research partners, including federal and territorial agencies, from private companies, and occasionally from international sources.

In 2012-2013, approximately eight dollars of funding for individual research project budgets came from outside the YRC for every dollar provided by Yukon College. Even when all YRC operational funds are included, YRC obtained \$1.33 in third-party funding for every dollar invested by Yukon Government.

The third-party funds identified above are only those reflected in YRC project budgets. YRC research partners often spend additional funds of their own in Yukon to support those projects, including staff time, transportation, communications, and other functions not included in the project budget. The amount of that ancillary investment in YRC research is not known, however.

Table 14 shows active projects reported by YRC in its 2014–2015 Final Report to Yukon Department of Education.

Table 14. 2014–2015 Yukon Research Centre Projects and Partners

Project	Partners
Trail Counters	Parks Canada
Biodiversity research	Environment Yukon, Kluane FN, Vuntut Gwitchen Government
Little Fox Lake air sampling	Aboriginal Affairs and Northern Development Canada (AANDC)
Northwest Boreal Landscape Conservation Co-Op	U.S. Fish and Wildlife Service
Biochar College University I2I	NSERC/Various Industrial Partners
Haines Junction Farm Project	Government of Yukon, CanNor
CARMA Reindeer and Caribou Network	Government of NWT, Aboriginal Affairs and Northern Development Canada (AANDC)
ReSDA sustainable development projects	Social Sciences and Humanities Research Council of Canada (SSHRC), Canadian Northern Economic Development Agency (CanNor)
Geophysical hazards mapping project	AANDC
Highways permafrost project	Yukon Department of Public Works
Permafrost bioengineering	Yukon Department of Public Works
Industrial Research Chair – multiple projects	Natural Sciences and Engineering Research Council (NSERC), Yukon Mine Producers
Hydro security project	Yukon Energy Corporation, NSERC
Arquluk (Bumpy Road) project	NSERC, Laval, DEd, YRC and Industry Partners
Climate Change Information and Mainstreaming Program (CCIMP)	Climate Change Secretariat (Yukon Environment)
Assessment of key buildings and infrastructure in Ross River, Yukon, related to permafrost	Highway and Public Works' Property Management Division, funded by Natural Resources Canada (NRCan)
Mitacs, Université INRS doctoral research project	Alexco Environmental Group and YRC funded PhD student
CANARIE Network	Federally funded nonprofit network with YRC serving as the Regional Advanced Network partner
Acquisition of soil and water analysis equipment	NSERC Applied Research Tools and Instruments (ARTI)
Labour market mobility in rural and remote communities	Government of Yukon Economic Development and Social Sciences and Humanities Research Council (SSHRC)
Investigation of Leonardite as a soil amendment	NSERC Applied Research Development (ARD), Wapaw Bay Resources
Potable drinking water	NSERC ARD, Northern Cross, Ltd.,

Mineral uptake in northern constructed wetland	NSERC ARD, Casino Mining Corporation,
Vegetation management under hydro lines	NSERC ARD, Yukon Energy
Potential of arctic char fish silage	NSERC ARD, Icy Waters' Arctic Char Fish Silage
Passive Water Treatment Workshop	NSERC, industry attendees
Climate change curricula for Nunavut	CCIMP, Government of Nunavut
Geophysical hazards mapping in Old Crow	AANDC
Fish otoliths chemistry as a tool for environmental assessment	Yukon Fish and Wildlife Enhancement Trust (YFWET), Access Consulting
Economic implications of climate change for mine access roads in northern Canada	Northern Climate ExChange with project partners Risk Sciences International and the International Institute for Sustainable Development
Assessment of recent past and current permafrost conditions under Front Street, Dawson City, YT	Transport Canada
Interpretation of water isotope tracer data for the Yukon River Watershed to support fish and wildlife habitat protection	Yukon Fish and Wildlife Enhancement Trust (YFWET), Yukon River Inter-Tribal Watershed Council (YRITWC)
Congdon Creek Campground Soapberry Removal Research	Environment Yukon
Challenges and barriers to Yukon Water Regulation	University of Saskatchewan
Logging permafrost boreholes and testing soil samples	Yukon Department of Public Works
Improvising rural youths' mobility choices for the future: Exploring the promise of theatrical improvisation and orientations to the self as methodology.	SSHRC

Source: Yukon Research Centre, *Final Report to Yukon Department of Education*, April 1, 2014 to March 31, 2015

Although fully operational for only a few years, in 2015 YRC filed its first two patents, on a plastic separation technology that could have international applications. Other intellectual property reported by YRC in 2014 includes 36 presentations, research papers and technical reports. The full value of YRC projects and collaborations with businesses, governments and other educational institutions will be realized over a long timeframe.

Effects on First Nations and Territorial Governance

The character and quality of life in Yukon is rooted in the heritage of its 14 First Nations. In part through its First Nations advisory body, PACFNI, the College works to address specific educational and governance needs of First Nations throughout Yukon. Yukon College serves First Nations students in many ways as described elsewhere, but also addresses the needs of First Nations through YRC, which conducts culturally

appropriate research, research on food security and a range of other ecological issues, and research that incorporates traditional knowledge.

In 2014–2015, 187 students successfully completed 24 credit and non-credit courses in First Nations Governance and Public Administration, First Nations Heritage and Culture, First Nations Leadership Training, and First Nations Community Services Administration. In addition, 175 fulltime and part-time students were enrolled in other credit courses related to government administration, including business administration, office administration, and public administration. Finally, 60 individuals participated in leadership and management training, in addition to 31 who took the First Nations Leaderships Training already mentioned.

The cumulative impact of this multi-layered involvement of the College in governance is not quantifiable, however it continues to build on itself over time as individuals and institutions acquire more and more expertise. Further, many of the most valuable and long-lasting benefits that accrue to First Nations governments do so through the broader educational mission of the College, that is, simply through access to education of all sorts. In 2014–2015, 390 students who indicated having Aboriginal identity enrolled in credit courses or programs at Yukon College.

**Table 15. Yukon College Students Enrolled in For-credit Courses or Programs
Who Indicate an Aboriginal Identity**

School or Division	Students Indicating Aboriginal Identity
School of Academic and Skill Development	173
School of Health, Education and Human Services	44
School of Management, Tourism and Hospitality	75
School of Liberal Arts	59
School of Science	17
School of Trades Technology and Mining/Trades/CNIM	22
Total	390

Source: Yukon College Data Warehouse

Altogether, Yukon College offered at least 80 courses in 2014–2015 directly or indirectly relevant to better governance at all levels. These included basic and intermediate business and computer skills, but also specific skills for governing, such as Understanding Legislation, Developing and Managing Budgets, Land Claims and Self Government, Public Policy, and Resource Agreement Negotiation.

Table 16. Yukon College Courses Relevant to Governance, 2014-2015

Accounting	General Business	Strategic HR Management
Bookkeeping Fundamentals 1, 2	Basic Computer Courses	Land Claims & Self Government
Bullet-Proofing your RFPs	Internet & Business	Analyzing Client Training Needs
Business Basics Workshop	Landfill Operations Basics	Designing Employment & Training Opportunities
Career Development/Planning	Laser Focusing your Proposals	Maintaining & Using Databases
Communication Skills	Proposal Writing	Partnerships & Proposals
Decision Making/Climate Change	Environmental Concerns	Leadership for Supervisors
Digital Skills for Work World	Time Management	Heritage Communications
Economics for MPA	Business Writing	Conducting Research
Financial Management Fundamentals	Yukon FN History & Culture Training	Leadership & Management Board Governance
Introduction to Bookkeeping	Networking & Security	Prob. Solving & Conflict Mgt.
JIBC Lead Yourself First	Computer Programming	Performance Management
Mediation Training	Web Technology Online	Lead Successful Meetings
Myers Briggs Workshop	Database Management	Coaching for Results
Orientation to Conflict Res	Yukon First Nations	Advanced Decision Writing
Problem Solving & Decision Making	MS Word 2010	Knowledge of Contracts & Agreements
Professional Minute-Taking	Understanding the Cloud -	Evaluating Projects & Reporting
Project Management 1, 2	MS Access 2010 1, 2	Compensation & Benefits Administration
Respect in the Workplace	Developing & Monitoring Budgets	Understanding Legislation
Setting Boundaries	Public Policy	First Nations Leadership Train Practice & Procedures
Simply Accounting 1, 2	Designing Effective Websites	Decision
Statistics for MPA	Employee Recruitment & Selection	
	Resource Agreement	
Strategic Writing for Bus Prof	Negotiation	Working with Clients
Transaction Analysis	MS Excel 2010 1, 2	Orientation, Mentoring & T.P.
Year-end Accounting		

Roles of the Thirteen Campuses

Yukon College consists of a main campus in Whitehorse, 11 community-based campuses, and a campus at the Whitehorse Correctional Center. The fact that each campus works directly with local constituencies to meet local needs, as well as being coordinated through a central administration, is key to the overall impact of the system.

Place-Based Education

A major reason for Yukon College's existence is the recognition that quality education must be grounded in the social, cultural and geographic environments in which that education takes place and in which it will be applied. Interviews for this study produced many examples of why and how Yukon College courses and research activities are specifically designed for Yukon. They also pointed out the problem of lecturers and researchers who come to Yukon without sufficient grounding in the local environment. Finally, place-based education not only produces a more effective local workforce, but makes it more likely that students from Yukon can outcompete job applicants from elsewhere.

Colleges and universities are also key building blocks for healthy communities. In each of the campus communities, Yukon College is an important economic institution as well as an educational and cultural resource. This includes the physical infrastructure that provides a gathering place and venue for community events and other activities in addition to classes. Intellectual and cultural activities—including speakers, films, forums, and workshops—enrich not only the lives of participants and observers but the broader community as well.

Quality of life is another factor that contributes to the business and economic health of a community and region. The high quality of life associated with having a local postsecondary institution helps attract and hold management, professional and other key workers and their families. Cultural events and research activities also help support local businesses.

Access to an Educational Continuum

Yukon College plays two key roles in Yukon's continuum of education. It is a bridge for high school graduates to higher levels of technical and academic achievement, and it allows individuals throughout the territory to fill gaps in their own training through continuing education courses. To illustrate the range of these opportunities, in 2014–2015 students enrolled in nearly 400 courses through Yukon College, ranging from Babysitting and Composting to Strategic Human Resource Management and Advanced Cardiac Life Support.

One of the College's most important roles is providing students, including those with jobs and families, access to programs and courses for personal and professional growth without leaving Yukon and, when needed, on a part-time basis. Some opportunities involve professional certifications, such as project management, first aid, and safety. Others are more general, such as homeowner skills, gardening, conflict resolution, and a variety of fundamental business and financial skills.

Opening the Door: Reducing Barriers to Post-Secondary Education in Canada (a 2010 report by the Standing Senate Committee on Social Affairs, Science and Technology) points out that a significant barrier to education, not just for Aboriginals but for all, is distance to postsecondary education. The report notes that the likelihood that a student will enroll in a postsecondary institution after completing secondary school is only 11 percent if the student lives more than 80 km from a college or university. The reasons are partly financial, but reluctance to leave friends and family is a contributing factor, as is lack of rural employment opportunities that require advanced education.

A key part of the education continuum in Yukon is courses designed to bridge gaps in students' education so they have access to new opportunities, so-called "upgrading." Upgrading can mean anything from prerequisites for more advanced courses to foundational courses necessary or helpful for virtually any educational or professional aspiration.

Other Benefits

Lower educational expense for students. Students who live with their parents or spouses in Yukon would incur greater living and travel expenses if they were forced to attend college outside the territory. Further, those that work continue spend money and pay taxes in Yukon, rather than elsewhere. There is no data on the precise living situations of Yukon College students, but nationally 42 percent of Canadian young adults (age 20 to 29) lived in a parental household as of 2011, which means a large number of postsecondary students likely rely on parental living subsidies.

Government revenues and savings. A better educated citizenry earns more, spends more, pays more taxes, and requires fewer social programs.

Appendix 1 – Demographics of Yukon College Students

Table 17. Demographics of Academic and Skill Development, 2014-2015

	Full-time		Part-time		Total	
	Number	Percent	Number	Percent	Number	Percent
Female	148	62%	46	53%	194	60%
Male	81	34%	36	41%	117	36%
Gender other or unknown	8	3%	5	6%	13	4%
First Nations	130	55%	33	38%	163	50%
Under age 20	32	14%	9	11%	41	13%
20 to 24	60	25%	26	31%	86	27%
25 to 29	41	17%	12	14%	53	17%
30 to 39	45	19%	16	19%	61	19%
40 to 49	36	15%	7	8%	43	13%
50 and up	23	10%	13	16%	36	11%
Total with valid ages	237		83		320	
Average Age	31.4		32.3		31.6	
Median Age	27		28		27	
Total Enrolled	237		87		324	

Source: Yukon College Data Warehouse

Table 18. Demographics of Career and Technical Programs, 2014-2015

	Full-time		Part-time		Total	
	Number	Percent	Number	Percent	Number	Percent
Female	104	71%	119	84%	223	77%
Male	42	29%	19	13%	61	21%
Gender other or unknown	1	1%	4	3%	5	2%
First Nations	43	29%	40	28%	83	29%
Under age 20	13	9%	4	3%	17	6%
20 to 24	34	23%	24	17%	58	20%
25 to 29	28	19%	24	17%	52	18%
30 to 39	41	28%	44	31%	85	30%
40 to 49	17	12%	19	13%	36	13%
50 and up	14	10%	26	18%	40	14%
Total with valid ages	147		141		288	
Average Age	31.7		35.8		33.7	
Median Age	28		34		31	
Total Enrolled	147		142		289	

Source: Yukon College Data Warehouse

Table 19. Demographics of Trades, 2014-2015

	Full-time		Part-time		Total	
	Number	Percent	Number	Percent	Number	Percent
Female	5	11%	6	38%	11	18%
Male	40	89%	9	56%	49	80%
Gender other or unknown	0	0%	1	6%	1	2%
First Nations	14	31%	6	38%	20	33%
Under age 20	12	27%	3	19%	15	25%
20 to 24	14	31%	3	19%	17	28%
25 to 29	10	22%	4	25%	14	23%
30 to 39	*	*	*	*	*	*
40 to 49	*	*	*	*	*	*
50 and up	*	*	*	*	*	*
Total with valid ages	45		16		61	
Average Age	26.6		29.4		27.3	
Median Age	23		28		24	
Total Enrolled	45		16		61	

Source: Yukon College Data Warehouse

Table 20. Demographics of Degree and Post-Graduate Programs, 2014-2015

	Full-time		Part-time		Total	
	Number	Percent	Number	Percent	Number	Percent
Female	34	61%	26	53%	60	57%
Male	21	38%	12	24%	33	31%
Gender other or unknown	1	2%	11	22%	12	11%
First Nations	14	25%	2	4%	16	15%
Under age 20	*	*	*	*	*	*
20 to 24	5	9%	11	23%	16	15%
25 to 29	21	38%	9	19%	30	29%
30 to 39	18	32%	9	19%	27	26%
40 to 49	9	16%	11	23%	20	19%
50 and up	*	*	*	*	*	*
Total with valid ages	56		48		104	
Average Age	32.0		35.2		33.5	
Median Age	29.5		32		30	
Total Enrolled	56		49		105	

Source: Yukon College Data Warehouse

Table 21. Demographics of University Transfer Programs, 2014-2015

	Full-time		Part-time		Total	
	Number	Percent	Number	Percent	Number	Percent
Female	127	64%	138	59%	265	61%
Male	70	35%	71	31%	141	33%
Gender other or unknown	3	2%	23	10%	26	6%
First Nations	53	27%	29	13%	82	19%
Under age 20	51	26%	42	18%	93	22%
20 to 24	59	30%	55	24%	114	26%
25 to 29	36	18%	33	14%	69	16%
30 to 39	40	20%	49	21%	89	21%
40 to 49	10	5%	28	12%	38	9%
50 and up	4	2%	25	11%	29	7%
Total with valid ages	200		232		432	
Average Age	26.0		31.2		28.8	
Median Age	23.5		27		25	
Total Enrolled	200		232		432	

Source: Yukon College Data Warehouse

Table 22. Demographics of All Yukon College Credit Programming, 2014-2015

	Full-time		Part-time		Total	
	Number	Percent	Number	Percent	Number	Percent
Female	418	61%	335	64%	753	62%
Male	254	37%	147	28%	401	33%
Gender other or unknown	13	2%	44	8%	57	5%
First Nations	254	37%	110	21%	364	30%
Under age 20	110	16%	58	11%	168	14%
20 to 24	172	25%	119	23%	291	24%
25 to 29	136	20%	82	16%	218	18%
30 to 39	147	21%	121	23%	268	22%
40 to 49	75	11%	68	13%	143	12%
50 and up	45	7%	72	14%	117	10%
Total with valid ages	685		520		1205	
Average Age	29.6		33.0		31.0	
Median Age	27		30		28	
Total Enrolled	685		526		1211	

Source: Yukon College Data Warehouse

Appendix 2 – Selected Bibliography

Baum, Sandy and J. Ma, K. Payea. *Education Pays, The Benefits of Higher Education for Individuals and Society*, College Board (2013)

Berger, Joseph. *“Why Access Matters” Revisited, A Review of the Latest Research*, Canada Millennium Scholarship Foundation (April 2008)

Finnie, Ross and D. Pavlic, N. Jevtovic, S. Childs. *Post-Schooling Outcomes of University Graduates: A tax Data Linkage Approach*, Education Policy Research Initiative (February 2015)

Frenette, Marc. *An Investment of a Lifetime? The Long-term Labour Market Premiums Associated with Postsecondary Education*, Statistics Canada, Social Analysis Division (February 2014)

Hansen, Jorgen. *Education and Early Labour Market Outcomes in Canada*, Learning Policy Directorate, December 2007

Hill, Kent and D. Hoffman, T. Rex, *The Value of Higher Education: Individual and Societal Benefits*, Arizona State University (October 2005)

Sarlo, Chris. *A Report Estimating the Combined Economic Impact of Nipissing University and Canadore College on the Local Economy (North Bay and Area): 2007-08*.

Tal, Benjamin and E. Enenajor. *Degrees of Success: The Payoff to Higher Education in Canada*, CIBC (August, 2013)

The Economics of Higher Education, United States Department of the Treasury and Department of Education (December 2012).

Investment in Education: Private and Public Returns, Joint Economic Committee of the United States Congress, January 2000.

Opening the Door: Reducing Barriers to Post-Secondary Education in Canada, Standing Senate Committee on Social Affairs, Science and Technology (December 2011)