

KVCC

KENNEBEC VALLEY
COMMUNITY COLLEGE

M A I N E

ECONOMIC IMPACT STUDY

SUMMER | 2018

 **MGT**
CONSULTING GROUP



Economic Impact of KVCC

An analysis of KVCC operational and student spending in state fiscal year 2017 and lifetime earnings of the Fall 2016 KVCC student cohort (degree-seeking) validated that KVCC is an important contributor to Maine's economy both directly and indirectly through spending for payroll, operations, capital improvements and student living expenses, as well as, increased earnings (over 30 years) and spending by the 2016 KVCC cohort.

- Based on this one year snapshot, the estimated value of the 30-year lifetime earnings differential for the 2016 KVCC cohort (1,613 degree-seeking students) compared to their counterparts who only earned a high school degree COMBINED with the State FY2017 annual economic impact of KVCC is **\$1.1 billion** in output, **\$636 million value added (GDP)** and **9,128 full- and part-time jobs**.
- Approximately 90% of KVCC graduates remain in the State of Maine, contributing an added value (GDP) to Maine's economy by virtue of their lifetime earnings.

ANNUAL ECONOMIC IMPACT OF KVCC OPERATIONS

In fiscal year 2017, KVCC recognized \$19,485,257 in revenues to fund operations of which \$6,837,939 was in state appropriation.

A goal of the economic impact analysis was to estimate a rate of return to the individual and to the State of Maine (relative to state appropriation level), based on fiscal year 2017 operational revenues and expenses of KVCC. The total estimated annual economic impact from KVCC's operations was **\$47 million in fiscal year 2017**. Below is an analysis of the operational impact of KVCC in state fiscal year 2017.

- Estimated annual industry output of **KVCC operations and payroll** was **\$32 million** in fiscal year 2017.
- Economic impact of **KVCC student spending** (e.g. housing, books, food & utilities, travel, etc.) in fiscal year 2017 was more than **\$15 million**.
- Approximately **75% of all KVCC purchases**, including supplies, equipment, professional services, building repairs, utilities, and travel, among others, were acquired locally.
- In fiscal year 2017, KVCC employees generated approximately **\$2.9 million** in state & local taxes, along with **\$4.7 million** in federal taxes.
- For every dollar of industry output resulting from the **\$6.8 million** state investment in KVCC, **\$4.18** is generated in economic activity by KVCC for the State of Maine.

ECONOMIC IMPACT OF KVCC BASED ON STUDENT LIFETIME EARNINGS

In addition to the economic impact of KVCC operation expenses, another important contributor to the economic impacts of the college is the students.

The Fall 2016 degree-seeking cohort (1,613 enrolled) was used to estimate the expected lifetime earnings of KVCC students as compared to their counterparts who only attained a high school diploma.



- The estimated value of the 30-year lifetime earnings differential between KVCC graduates and their counterparts who attain only a high school diploma is estimated to generate an output of **\$1.06 billion**,
- An estimated **\$603 million** represents the value added production into the state economy over 30 years.
- The estimated value added average is **\$20.1 million** annually.

ECONOMIC HIGHLIGHTS FOR THE KVCC MARKET AREA

The KVCC market area population is **over a quarter million** inhabitants, representing about 19% of the Maine population. This region produces a state GDP of **\$9.8 billion** annually.

- From 2015 to 2016, the KVCC market area experienced a rise in employment of 1.6%; this resulted in approximately a 4% growth in state GDP. This also represented a growth in income of about 10%. **This regional growth rate is higher than the growth rate for the State of Maine overall** where real GDP growth increased 0.6% and personal income grew 3.9% from 2015-2016.
- Between the years of 2010 and 2016, the KVCC market area experienced a decline of 4% in the prime working age population (ages 25 through 64 years). This population is projected to decrease by 5,111 between years 2020-2030.
- From 2004 to 2014, **Maine's job growth in ambulatory health care services and hospitals has increased 5.3% and 10.6%** respectively; this corresponds with KVCC's output of graduates in nursing and other health professions.

KVCC PROFILE

In 2017-2018, BestColleges.com rated KVCC as the top community college in Maine based on quality of education, meaningful learning experiences, and affordability.

- The KVCC Fall 2016 student headcount was 2,551. Degree-Seeking students totaled 1,613. Two-thirds of the student population is female. Nearly half of the students are between the ages of 18 and 24 years.
- About 75% of students are from Kennebec or Somerset counties.
- Instruction, academic support, student services, and institutional support comprise about 77% of the KVCC operating budget.
- On average, KVCC hosts approximately 100 events serving 7,437 attendees across both the Alford and Fairfield campuses each year.

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**AN ECONOMIC IMPACT ANALYSIS OF
KENNEBEC VALLEY COMMUNITY COLLEGE**

**FINAL REPORT
JULY 17, 2018**

**BY:
ECONOMIC RESEARCH ENTERPRISES**

**JULIE HARRINGTON, PH.D.
MARTIJN NIEKUS, DRS.**

EXECUTIVE SUMMARY

The Maine Community College System (MCCS) is comprised of seven colleges, with the mission: to provide associate degree, and certificate programs directed at the educational, occupational and technical needs of the State's citizens and the workforce needs of the State's employers. The primary goals of the System are to create an educated, skilled and adaptable labor force which is responsive to the changing needs of the economy of the State and to promote local, regional and statewide economic development. In 2016-17, a total of 17,311 students were enrolled in credit courses (as of Fall 2016), with over half of enrolled students working more than 20 hours per week. Overall, about 92 percent of the MCCS graduates secure gainful employment or continue their education.¹

Kennebec Valley Community College (KVCC) is a comprehensive public community college serving 2,551 full- and part-time students in fall 2016. Established nearly 50 years ago, the College's 70-acre main campus is in Fairfield, Maine. There is also a newer 600-acre Harold Alfond Campus that is located seven miles to the north, in Hinckley, Maine. Approximately three-quarters of both degree-seeking and undeclared students are from Kennebec or Somerset County and an additional 10% of students are from Knox and Waldo counties. In 2017, KVCC was listed the top community college in Maine, with a rank score of 78.67.² KVCC's mission is to prepare students to achieve their educational, professional, and personal goals in a supportive environment through shared values of responsibility, integrity, and respect. The College offers 39 degree and certificate programs, including thirty associate degrees in allied health, nursing and technical programs.

In 2017, KVCC commissioned MGT Consulting Inc., and Economic Research Enterprises (ERE) to conduct an Economic Impact Analysis and Housing Demand Study. The following provides an overview of the objectives of the study:

- ◆ Identify, define, and quantify direct, indirect, and induced economic activity generated by KVCC educational degree and certificate programs.
- ◆ Provide estimates and analysis of the total economic impact including, direct, indirect and induced impact, appropriate multiplier effects, and tangible and intangible effects.
- ◆ Assess estimates according to a matrix of economic and non-economic impact.
- ◆ Provide a rate of return on investment for the individual and for the state of Maine (relative to state appropriation levels), based on KVCC's workforce development, preparation for further education, and community supporting activities.
- ◆ Include the number of jobs (direct and indirect) created or enhanced as a result of KVCC instructional activities.
- ◆ Provide an analysis of KVCC's impact on the quality of life in the local and regional area.
- ◆ Evaluate a proposal to construct a 2-phase, 150-bed residential facility at the College to project the economic impact of the facility on the institution and the region, including an analysis of the

¹ See: <https://www.mccs.me.edu/> and <https://www.mccs.me.edu/wp-content/uploads/factsheet.pdf>.

² See: <http://www.bestcolleges.com/features/best-colleges-in-maine/>

ability to attract students from areas not served by the College's traditional commuter population, including out-of-state students.

The economic impact of KVCC operations in 2016-17, including economic multiplier effects arising from supply chain activity (indirect effects) and employee household spending (induced effects), is presented in **Table ES1**. KVCC's economic impact was estimated at \$47 million in output or revenues, \$33.5 million in value added (GDP), and 468 full-time and part-time jobs.

TABLE ES1. SUMMARY OF KVCC ECONOMIC IMPACT BY OPERATIONAL ACTIVITY

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC Operations & Payroll	\$ 31,674,050	\$ 22,814,590	372	\$ 16,147,581
Student Spending (instate & out-of-state)	\$ 15,443,049	\$ 10,691,614	96	\$ 1,445,396
Total	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977

Notes: Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures, and IMPLAN software and state of Maine/county (2016) data. Employment includes full-time and part-time jobs.

From a benefit/cost perspective, as shown in **Table ES2**, for every dollar of industry output resulting from a \$6.8 million state investment in KVCC, \$4.18 is generated in economic activity by KVCC for the State of Maine.

TABLE ES2. KVCC'S BENEFIT COST RATIO RELATING TO THE STATE INVESTMENT OR OPPORTUNITY COST

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC State Investment (Cost)	\$ 11,266,681	\$ 6,792,289	108	\$ 5,132,048
KVCC Economic Impacts (Benefit)	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977
Benefit/Cost Ratio	4.18	4.93	4.33	3.43

Notes: When compared with recent economic impact studies from other community colleges and state universities, KVCC is in the range of standard benefit/cost ratios using IMPLAN (e.g., Grand Rapids Community College in MI: 4.2 to Montgomery County Community College in PA: 6.0). Other benefit/cost studies not using IMPLAN (and without transparent or easily replicable methodologies) were found to have benefit/cost ratios ranging from: 2.5 (University of Texas - Austin) to 12.8 (Ozarka College, AR). Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures, and IMPLAN software and state of Maine/county (2016) data. Employment includes full-time and part-time jobs.

In 2017, the total combined economic impact of KVCC was estimated at \$1.1 billion in output or revenues, \$636 million in value added (GDP), and 9,128 full-time and part-time jobs. This includes significant impact attributed to the projected earnings differentials (compared with high school graduates) by the KVCC degree-seeking cohort over a 30-year period of employment, as shown in **Table ES3**.

TABLE ES3. KVCC ECONOMIC IMPACT
INCLUDING PROJECTED LIFETIME EARNINGS OF DEGREE-SEEKING STUDENT COHORT

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC Operations, Payroll, and Student Spending Subtotal	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977
Lifetime Earnings (30 years)	\$ 1,055,012,668	\$ 602,868,058	8,660	\$ 315,355,374
Grand Total	\$ 1,102,129,767	\$ 636,374,262	9,128	\$ 332,948,351

Notes: Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures, and IMPLAN software and state of Maine/county (2016) data. Employment includes full-time and part-time jobs.

In summary, KVCC is an important contributor to Maine's economy both directly and indirectly through spending for payroll, operations, capital improvements, student spending, and through increased lifetime earnings and spending by graduates.

INTRODUCTION

Kennebec Valley Community College (KVCC) is a comprehensive public community college serving approximately 2,551 full- and part-time students in fall 2016. Established nearly 50 years ago, the College's 70-acre main campus is in Fairfield, Maine. There is also a newer 600-acre Harold Alford Campus that is located seven miles to the north, in Hinckley, Maine. Approximately three-quarters of both degree seeking and undeclared students are from Kennebec or Somerset County and an additional 10% of students are from Knox and Waldo counties. KVCC's mission is to prepare students to achieve their educational, professional, and personal goals in a supportive environment through shared values of responsibility, integrity, and respect. The College offers 35 degree and certificate programs, as of fall 2017, including thirty associate degrees in allied health, nursing and technical programs. KVCC is the primary point of access to public higher education for the population served in the KVCC four county (Kennebec, Somerset, Knox and Waldo) market area. KVCC also focuses on providing local and regional needs of employers in addition to preparation for success in upper division studies. Students enroll at KVCC as a means to retool and retrain during economic downturns as well as in periods of growth. A hallmark of KVCC is responsiveness in meeting the needs of businesses and industry as they embrace emerging technologies.

In 2017, KVCC commissioned MGT Consulting Inc., and Economic Research Enterprises (ERE) to conduct an Economic Impact Analysis and Housing Demand Study. The following provides an overview of the objectives of the study:

- ◆ Identify, define, and quantify direct, indirect, and induced economic activity generated by KVCC educational degree and certificate programs.
- ◆ Provide estimates and analysis of the total economic impact including, direct, indirect and induced impact, appropriate multiplier effects, and tangible and intangible effects.
- ◆ Assess estimates according to a matrix of economic and non-economic impact.
- ◆ Provide a rate on return on investment for the individual and for the state of Maine (relative to state appropriation levels), based on KVCC's workforce development, preparation for further education, and community supporting activities.
- ◆ Include the number of jobs (direct and indirect) created or enhanced as a result of KVCC instructional activities.
- ◆ Provide an analysis of KVCC's impact on the quality of life in the local and regional area.
- ◆ Evaluate a proposal to construct a 75-bed residential facility for the College to project the economic impact of the facility on the institution and the local area, including an analysis of the ability to attract students from areas not served by the College's traditional commuter population, including out-of-state students.

Following the Introduction and Literature Review sections, the report will first highlight the demographics and labor (or supply) markets of the KVCC market area. The labor supply markets include the short-term labor market dynamics, longer term structural changes, and employment by industry sectors. The next section will highlight the demographics of KVCC student enrollment in market area. The third section will cover the economic impact analysis methodology, data, and economic modeling

framework. Following the economic impact analysis section, is a discussion regarding KVCC graduate employment and earnings, including life-time earnings, in addition to providing an overall picture of educational attainment. The last section includes the study's conclusions with a discussion of the summary economic impact results.

LITERATURE REVIEW

KVCC operates in two locations; the Fairfield 70-acre campus and the Henry Alford 600-acre campus. Both campuses are located within seven miles of each other. KVCC's market area comprises four counties: Kennebec, Somerset, Knox and Waldo counties, totaling about 5,890 square miles. The population is 250,592, including 106,236 households, 147,549 employees, and a Gross Regional Product (GDP) of \$9.81 billion.³ Of the 281 industries, the top business sectors are: employment and payroll of state government non-education, employment and payroll of local government education, hospitals, real estate, and whole sale trade. Rounding out the next five sectors are: full-service restaurants, individual and family services, limited-service restaurants, retail (food & beverage stores), and retail (general merchandise stores).

Recently, a study was conducted by the Federal Reserve Bank of Boston, which analyzed growth occupations in the area. The authors noted the high employment rate (9.5%), and poverty rate (13.1%) of Somerset County.⁴ Their analysis was based on identifying the growth occupations that exceeded MIT's living wage-defined wage salary for the area. The findings showed that, in SE Maine, the top occupations not requiring a Bachelor's degree or higher (by total employment) were: First line supervisors of office and administrative support workers, first line supervisors of production and operating workers, licensed practical/vocational nurses, executive secretaries and executive administrative assistants, and police and sheriff's patrol officers. The top occupations that required a Bachelor's degree or higher are registered nurses, and general and operations managers. The fastest growing demand occupation for current and future workers is the medical industry. The study noted that students at KVCC tend to be older with many looking for skill, not necessarily a degree, as their desired outcome. KVCC is creating programs that support micro-business and other value-added industries, e.g., artisanal cheeses, organic beef farms, etc. The industries identified by KVCC as the major/high road employer partners in the community are: All Hospitals, Precision Manufacturing (Aluminum Welding, Kennebec Technologies, Mid-State Machine), Northern Pride (installation/decommission of cell phone towers), among others (including the Maine's Quality Center for additional information). Similar to Maine's demographic data regarding student residency status, the majority of KVCC's students are Maine residents, and the majority also work in the local area/Maine region after completion of their studies. The author(s) note that this may not be the case in the near future as KVCC-related transportation and housing challenges pose real-time challenges that may further constrain students to pursue other means for the community college education.⁵

Based on the latest data years of 2015 and 2016, the KVCC market area has experienced a 3.86 percent growth in gross regional product (GDP), and a substantial growth in personal income, of 9.87 percent. Economic growth is positively correlated with job growth, as in the KVCC region total employment has also grown by 1.61 percent. When compared to the most recent forecast by the Consensus Economic

³ IMPLAN 2016 data for the study region.

⁴ According to a report conducted by Mr. Garvin Donegan, of the Central Maine Growth Council (CMGC), it should be noted that the poverty rate is much higher in the town of Waterville, at 22.8 percent. Kennebec County and the state of Maine's poverty rates were 13.8 percent and 14.1 percent, respectively.

⁵ Mauricio, Kaili. 2017. Kennebec Valley Community College Growth Occupation Analysis. Federal Reserve Bank of Boston. Unpublished. Data for the study compiled from ACS and BLS.

Forecasting Commission (Oct. 28, 2016) it is noted that the KVCC market area has recently experienced a much higher rate of growth in GDP than that of the state of Maine.⁶

Maine's overall population is shifting towards a more aging demographic. A 2013 study on the Maine labor force, conducted by the Maine Center for Workforce Research and Information & Maine Department of Labor, found that, based on current economic conditions; during the next ten years 18 percent of current Maine workers will reach the age of 65; however, during the next twenty years that percentage will rise to 43 percent. From 2013 to 2016 alone, there has been an 18 percent increase in the number of workers over the age of 55 years.⁷ This is especially critical relating to projected nursing shortages.⁸ The aging population dynamic is also reflected in the KVCC market area, with populations for ages less than 64 years expecting to decline significantly from years 2010 to 2020, for all age groupings: ages 0-14 years, ages 15-24 years, and ages 25-64 years, by 2,963, 4,393 and 3,155, respectively. Relating to the prime working age group in the KVCC region between ages 25-64 years, there is even a more precipitous drop predicted of 5,111, during years 2020-2030.⁹

KVCC continues to expand their STEM and emerging technologies program offerings, which reflects the Maine Community College System. The recent STEM profile report generated by Astra's Global STEM & Innovation project, found that the number one STEM occupation projected in year 2025 in Maine was for SOC 11-9199 (Managers, All Other). Included as other top STEM jobs in Maine for 2025 were; accountants, first line supervisors of food preparation, logging equipment operators, business operations, construction managers, cooks, clinical counseling, and engineering technicians, among others.

The Lumina Foundation uses a national set of metrics to measure their impact and measure progress to year 2025. They focus on a set of four factors to increasing educational attainment, including: awareness, enrollment, persistence and completion. Each metric has a specific benchmark and target date. For example, they've increased the overall annual higher education completion rate to 57 percent (including 3 million awards) in 2015. There are 26 states that have set state attainment goals that meet the Lumina Foundation's criteria for rigor and efficacy (i.e., that the goal is quantifiable, challenging, long term, addresses gaps, and is in statute and/or a strategic plan). They underscore the need for further development of pathways across the postsecondary system including certificates and certifications as a means for students to climb the "credential ladder." Maine has not yet set a goal to meet Lumina's criteria.

Maine's economy is on an upward trajectory, continuing to exhibit positive economic growth, albeit at a relatively slow pace. For 2015-16, the KVCC market area's economic growth was much greater than the state of Maine, with GDP rising 3.86 percent, and personal income growth of 9.87 percent annually. For both the state of Maine and the KVCC market area, the projected reduction in the workforce ages (25-64 years), and corresponding very high growth in ages 65 years or older, is a disturbing trend. Although the aging growth is projected over the next 20 years, it is important to currently work to develop and implement economic development plans of action, in order to grow Maine's economy. KVCC and local

⁶ See: Office of Policy and Management. 2016. Consensus Economic Forecasting Commission. The CEFC found that real GDP growth increased 0.6 percent, and personal income grew 3.9 percent, from 2015 to 2016.

⁷ Dorrer, John. 2017. Chief Workforce Strategist, Maine Community College System.

⁸ "We have a perfect storm," said Lisa Harvey-McPherson, vice president of government relations for Eastern Maine Healthcare Systems. "We don't have enough younger nurses to replace our aging nursing workforce, and we don't have enough faculty to fill current positions as well as plan for our retirement crisis."

⁹ Colgan, Charles S. 2017. Economic Background to KVCC Strategic Plan.

businesses are excellent avenues for advocacy for promoting higher education standards, creative career and professional academies, student internships, and talent development.

KVCC MARKET AREA DEMOGRAPHICS AND LABOR MARKETS

According to the US Census,¹⁰ as shown in **Figure 1**, the KVCC market area includes Kennebec, Somerset, Waldo and Knox counties; and has an estimated population of 250,592 as of July 2016, showing a decrease of 0.9 percent over the April 2010 base (equivalent to ~-0.1 percent annually). Maine's population of 1,331,479 has grown 0.2 percent over the same period (or 0.0 percent annually). As depicted in **Table 1**, in summary, the four-county region constitutes 18.8 percent of the Maine population as of 2016, a slight drop from its 19.0 percent share in 2010.

¹⁰ This paragraph is, unless otherwise indicated, based on data retrieved from:
<https://www.census.gov/quickfacts/fact/table/knoxcountymaine,waldocountymaine,somersetcountymaine,kennebeccountymaine,ME/PST045216>

FIGURE 1. LABOR MARKET AREAS IN MAINE

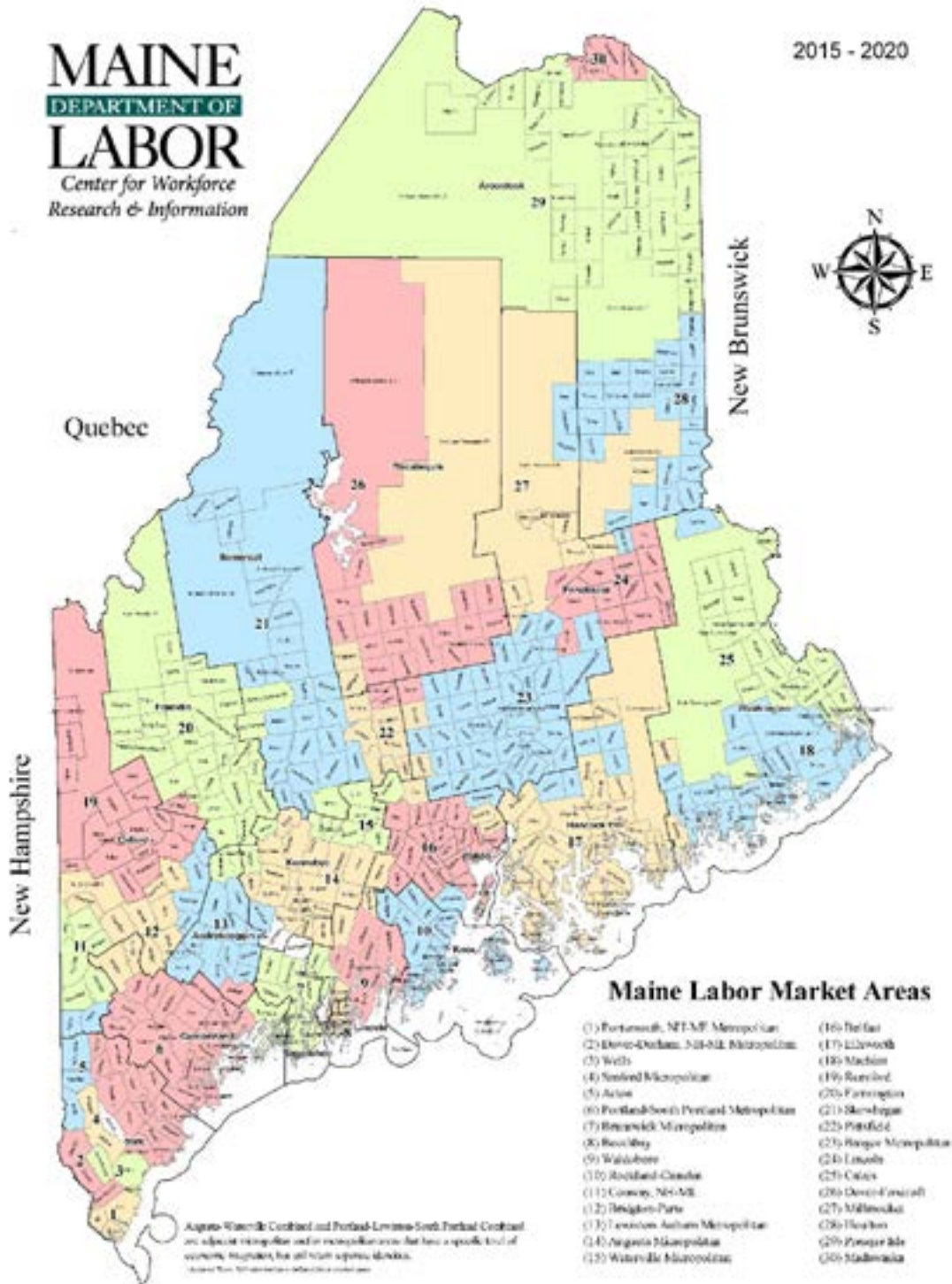


TABLE 1. STATE AND COUNTY POPULATIONS, 2010 AND 2016

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Population estimates, July 1, 2016	120,569	39,744	50,915	39,364	250,592	1,331,479
Population estimates base, April 1, 2010	122,151	39,736	52,228	38,786	252,901	1,328,364

As presented in **Table 2**, the population under 5 years of age, in the four-county region, decreased 6.2 percent from April 2010 to July 2016, or -1.0 percent annually. Similarly, the population under 18 years decreased 7.7 percent during the same timeframe, or 1.3 percent annually. Conversely, for the region, the population 65 years and over, has increased 19.9 percent over the indicated timeframe, or 3.0 percent annually. The population between the ages of 18 and 65 (i.e., the workforce), decreased by 4.1 percent, or 0.7 percent annually. For the state of Maine, the decrease in the age bracket under 18 years is 7.5 percent, or 1.2 percent annually. The increase in the elder (over 65 years) bracket is 22.3 percent, or 3.3 percent annually, whereas the workforce age bracket decreased 2.8 percent, or 0.4 percent annually. In summary, in the four-county region, the decrease in the 18 to 65-year cohort, is 1.5 times the state's annual rate¹¹.

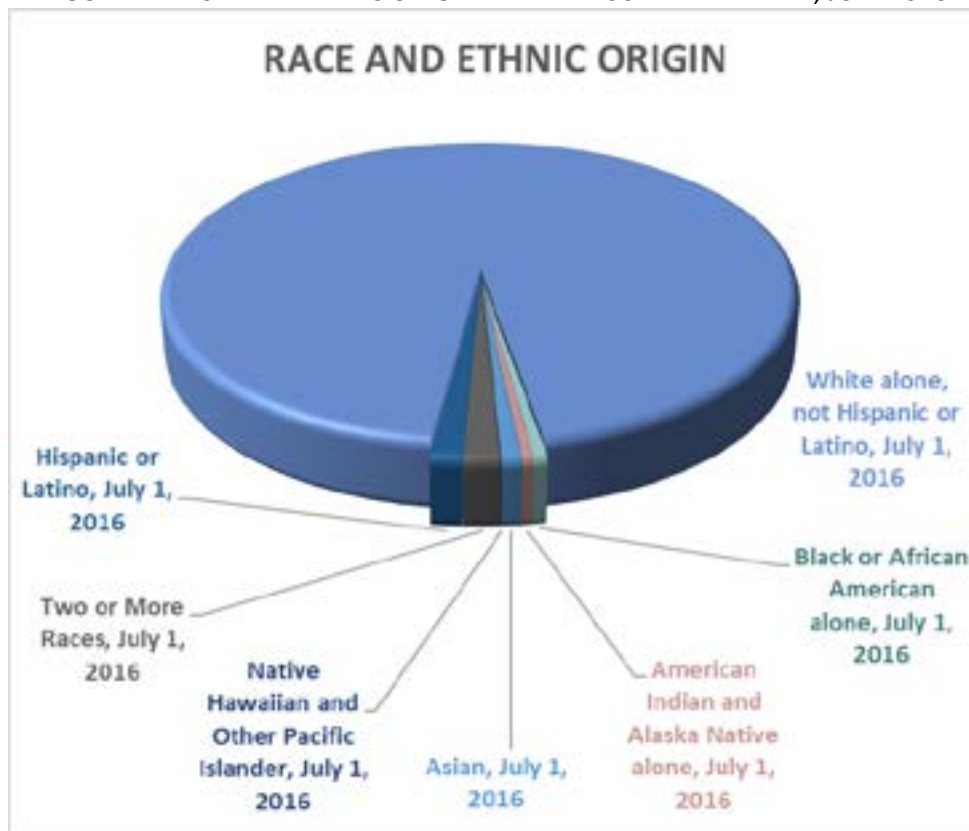
TABLE 2. STATE AND COUNTY POPULATIONS BY AGE, 2010 AND 2016

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Persons under 5 years, percent, July 1, 2016	5.1%	4.7%	4.7%	4.6%	12,221	4.9%
Persons under 5 years, percent, April 1, 2010	5.2%	4.8%	5.2%	5.3%	13,031	5.2%
Persons under 18 years, percent, July 1, 2016	19.7%	18.1%	19.4%	19.0%	48,302	19.1%
Persons under 18 years, count, July 1, 2016	23,752	7,194	9,878	7,479	48,302	254,312
Persons under 18 years, percent, April 1, 2010	20.7%	19.4%	21.4%	21.0%	52,316	20.7%
Persons 65 years and over, percent, July 1, 2016	18.0%	23.5%	20.2%	20.9%	49,554	19.4%
Persons 65 years and over, percent, April 1, 2010	15.5%	19.1%	16.3%	16.2%	41,319	15.9%
Persons over 18 years and under 65 years, July 1, 2016	23,210	23,658	30,753	75,114	152,735	818,860
Persons over 18 years and under 65 years, April 1, 2010	24,438	24,358	32,538	77,932	159,266	842,183

Relating to Race and Ethnic Origin, the KVCC market area population, according to **Figure 2**, consists of 95.2 percent Whites (Non-Hispanic), and 0.60 percent African American, or Blacks. There are a small number of Native Hawaiians and Other Pacific Islanders, especially in Somerset County, which number greater than zero (but less than a tenth a percentage).

¹¹ For the 18 and 65-year age bracket, the difference between the four-county region and Maine, is 0.7 percent (-0.67%) versus 0.4 percent (-0.45%) annually, respectively (or 1.5 times the state's annual rate).

FIGURE 2. RACE AND ETHNIC ORIGIN IN THE KVCC MARKET AREA, JULY 2016



Source: US Census, QuickFacts data.¹²

As shown in **Table 3**, the number of households in the four-county region (107,130) is 19.4 percent of the total Maine household count (of 553,284), which is slightly higher than the workforce ratio of 18.7 percent.¹³ The average number of persons per household in the KVCC market area is slightly lower than in the state of Maine.

TABLE 3. STATE AND COUNTY HOUSEHOLDS AND PERSONS PER HOUSEHOLD, 2011-2015

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total ²	Maine
High school graduate or higher, percent of persons age 25 years+, 2011-2015	91.5%	93.0%	87.9%	92.2%	91.1%	91.6%
					184,329	
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	25.0%	31.2%	15.4%	30.3%	24.9%	29.0%
					50,341	

¹² US Census, QuickFacts data. Data retrieved from:

<https://www.census.gov/quickfacts/fact/table/knoxcountymaine,waldocountymaine,somersetcountymaine,kennebeccountymaine,ME>

¹³ For 2016, the four-county region workforce age are: 152,735, and for Maine are: 818,160 (or 18.7 percent).

Pertaining to educational attainment, the four county-region relative count in high school or higher equals that of the state of Maine. Among bachelor's degree earners, however, the four-county region falls short of the Maine average, due to low relative counts in Somerset and Kennebec counties.

TABLE 4. STATE AND COUNTY EDUCATIONAL ATTAINMENT, 2010-2015¹⁴

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total ²	Maine
High school graduate or higher, percent of persons age 25 years+, 2011-2015	91.5%	93.0%	87.9%	92.2%	91.1% 184,329	91.6%
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	25.0%	31.2%	15.4%	30.3%	24.9% 50,341	29.0%

The civilian labor force in the KVCC market area for 2016 is estimated at 124,432 or about 61.5 percent of the population 18 years of age and older (**Table 5**). The percentage is slightly below the Maine percentage of 63.4.

TABLE 5. STATE AND COUNTY CIVILIAN LABOR FORCE, 2010-2015¹⁵

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total ³	Maine
In civilian labor force, total, percent of population age 16 years+, 2011-2015	62.8%	61.7%	58.1%	61.8%	61.5% 124,432	63.4%

As presented in **Table 6**, the mean travel time for workers in the KVCC market area is estimated at 23.34 minutes, which is in line with the state-wide mean travel time.

TABLE 6. STATE AND COUNTY WORKER'S MEAN TRAVEL TIME, 2010-2015¹⁶

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total ⁴	Maine
Mean travel time to work (minutes), workers age 16 years+, 2011-2015	17.5	26.3	25.4	23.5	23.34	23.6

As shown in **Table 7** (and **Figure 3**), median household income in the KVCC market area (in 2015 dollars) is \$45,675, and median per capita income is \$25,212. Median household income in the state of Maine (in 2015 dollars) is \$49,331, and median per capita income is \$27,655, which is slightly higher than in the four-county region.

¹⁴ The four-county weighted average count is based on the population estimates July 2016 minus the estimates on persons 18 years or less.

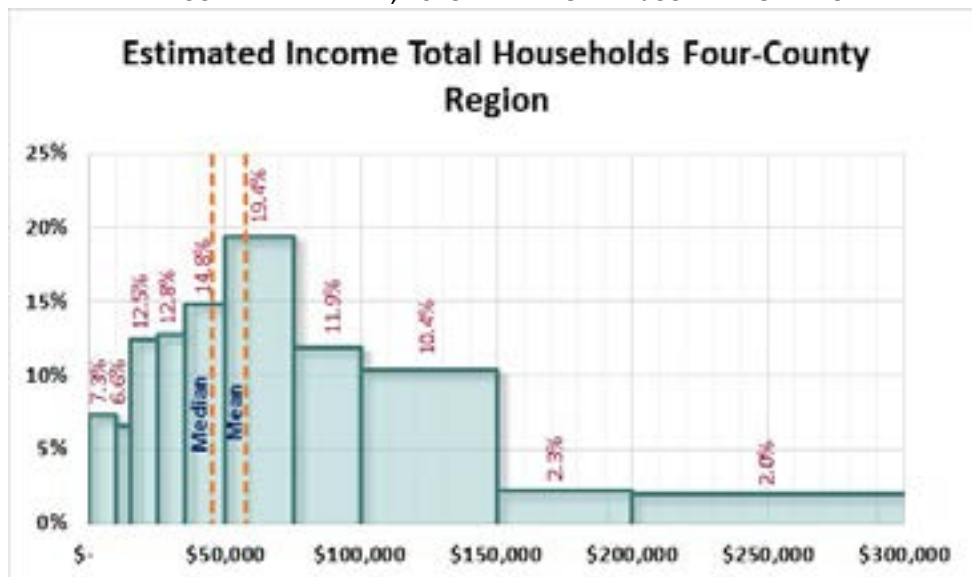
¹⁵ The four-county weighted average count is based on the population estimates July 2016 minus the estimates on persons 18 years or less.

¹⁶ The four-county weighted average count is based on the population estimates July 2016 minus the estimates on persons 18 years or less.

TABLE 7. STATE AND COUNTY MEDIAN HOUSEHOLD INCOME AND PER CAPITA INCOME
(IN 2015 DOLLARS), 2011-2015

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total ⁵	Maine
Median household income (in 2015 dollars), 2011-2015	\$ 46,917	\$ 50,693	\$ 40,066	\$ 44,082	\$ 45,675	\$ 49,331
Per capita income in past 12 months (in 2015 dollars), 2011-2015	\$ 25,957	\$ 28,144	\$ 21,729	\$ 24,473	\$ 25,212	\$ 27,655

FIGURE 3. ESTIMATED TOTAL HOUSEHOLDS INCOME AND BENEFITS PER INCOME BRACKET, KVCC MARKET AREA, 2015 INFLATION ADJUSTED DOLLARS



Source: US Census, 2011-2015 American Community Survey 5-Year Estimates¹⁷

The total of business establishments in the four-county region relative to the total in Maine is 17.36 percent, slightly below the relative population percentage of 18.8 percent (Table 8). Relative total employment and payroll is even lower at 16.45 and 15.1 percent respectively, relative to the Maine total values. Employment increased slightly from 2014 to 2015, which is calculated at 0.12 percent, but is rather low as compared to the same for the state of Maine at 1.6 percent. Total non-employer establishments are relative 18.9 percent of the Maine total, which is in line with the relative population percentage of 18.8 percent.

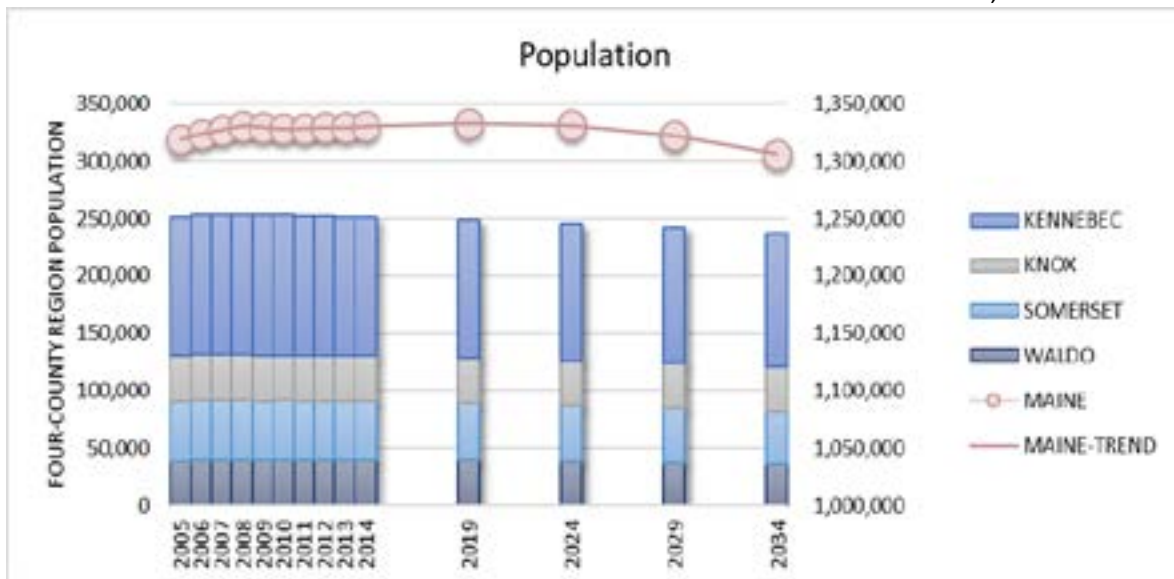
¹⁷ US Census, 2011-2015 American Community Survey 5-Year Estimates. Data retrieved from: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_5YR_B19001&prodType=table

TABLE 8. STATE AND COUNTY BUSINESSES, EMPLOYEES, AND PAYROLL, 2015

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Total employer establishments, 2015	3,203	1,734	1,164	981	7,082	40,801
Total employment, 2015	45,976	14,160	13,549	8,662	82,347	500,549
Total annual payroll, 2015 (\$1,000)	\$ 1,729,544	\$ 522,548	\$ 519,479	\$ 311,054	\$ 3,082,625	\$ 20,413,159
Total employment, percent change 2014-2015	0.9%	0.0%	-2.3%	0.2%	0.1%	1.6%
Total non-employer establishments, 2015	8,395	5,919	3,188	3,853	21,355	113,012

Figure 4 provides a generalized view of the four-county region population (e.g., left hand scale) and for Maine (e.g., right hand truncated scale), for years 2005 through 2034. The relative changes in Maine’s population are on average per year; +0.04 percent for years between 2014-2019, -0.03 percent for years between 2019-2024, -0.13 percent for years between 2024-2029, and -0.24 percent for years between 2029-2034. Similarly, the annual average changes for the same year intervals for the four-county region are; -0.17 percent, -0.24 percent, -0.33 percent and -0.44 percent, respectively. In effect, the four-county region’s population share, expressed relative to the state of Maine’s total population, is expected to drop (based on current conditions) from 18.9 percent in 2014, to 18.1 percent in 2034.

FIGURE 4. POPULATION PROJECTIONS FOR STATE AND FOUR-COUNTY REGION, 2005-2034



Source data: Maine’s Office of Policy Management¹⁸

The following Figures 5 and 6 present the same population data (as Figure 4) for the KVCC market area, but from an age cohort perspective. For both figures, it’s clear that age cohort years 25-64 will see a sharp decline in number, whereas the age cohort for 65 and over, will see a rise in number over time.

¹⁸ Office of Policy Management; population projections for the State of Maine and its counties and towns for 5-year intervals to 2034, based on 2014 U.S. Census Bureau population estimates. Data retrieved from <http://maine.gov/economist/projections/index.shtml>

The comparisons provided in **Figure 7** shows the contrast in age cohorts between years 2014 and the year 2034 projections.

FIGURE 5. REGIONAL POPULATION PROJECTIONS BY AGE COHORTS STACKED, 2005-2034

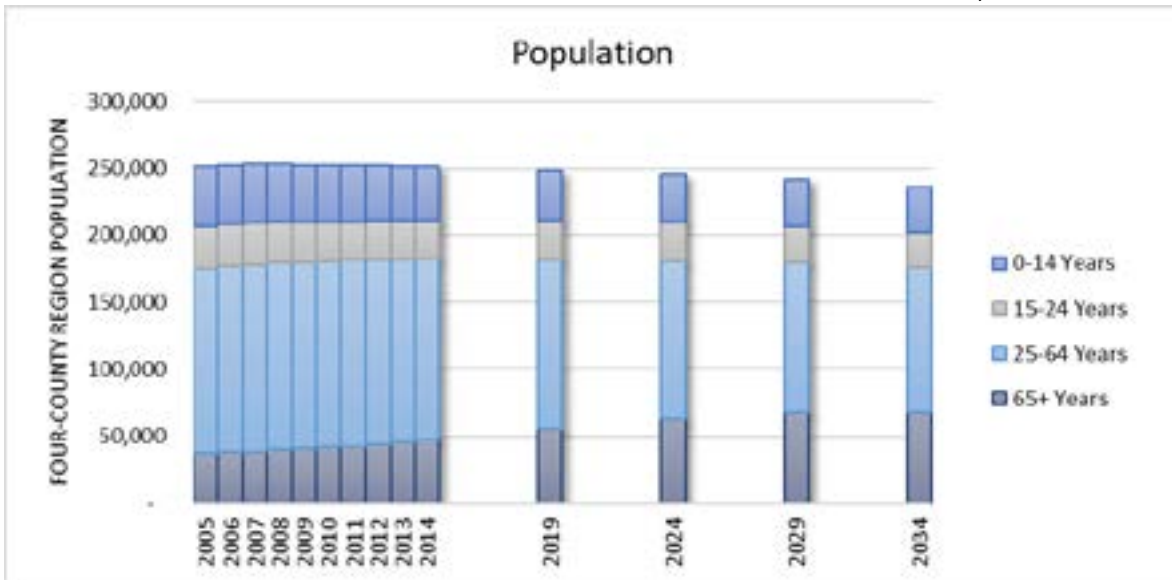
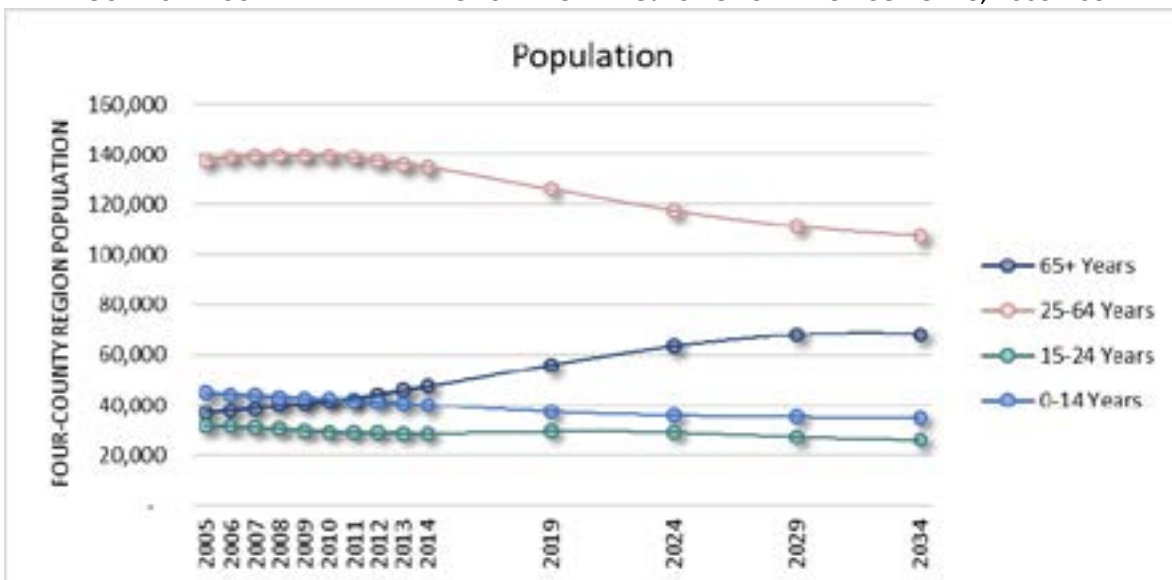


FIGURE 6. KVCC MARKET AREA POPULATION PROJECTIONS BY AGE COHORTS, 2005-2034



Both age cohorts 0-14 years of age, and 15-24 years of age, show marginal declines over time. From an economic perspective, the primary wage earners, or workforce (ages 25-64 years) are expected to experience a significant decline from 54 percent in 2014, to 45 percent in 2034.¹⁹ Conversely, the cohort aged 65 years and over, is projected to see a rise from 19 percent in 2014, to 29 percent in 2034 (**Figure 7**).

¹⁹ It should be noted that the projections were based on current, or baseline economic conditions, ceteris paribus.

FIGURE 7. KVCC MARKET AREA POPULATION PROJECTIONS BY AGE COHORTS, 2005-2034

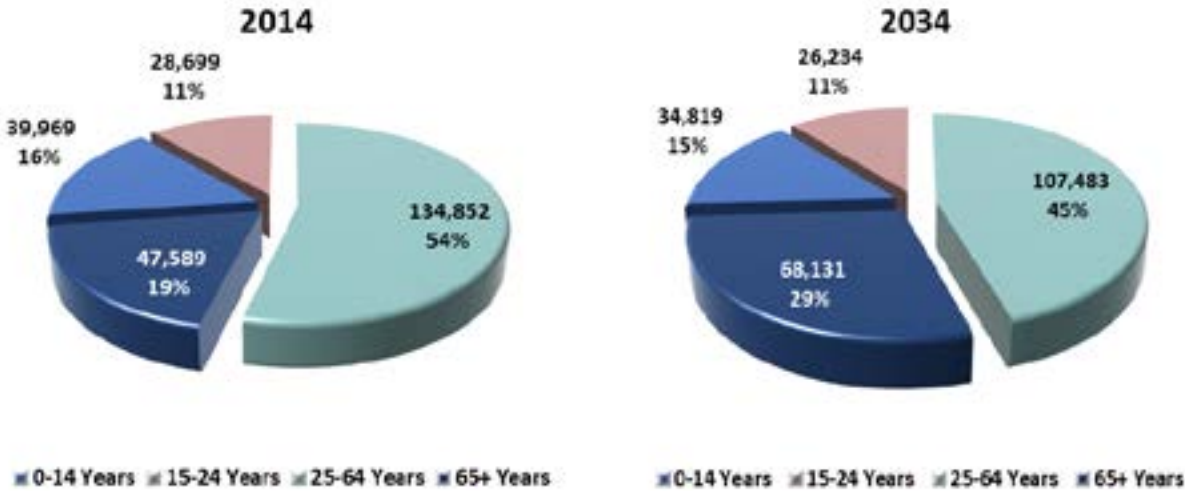
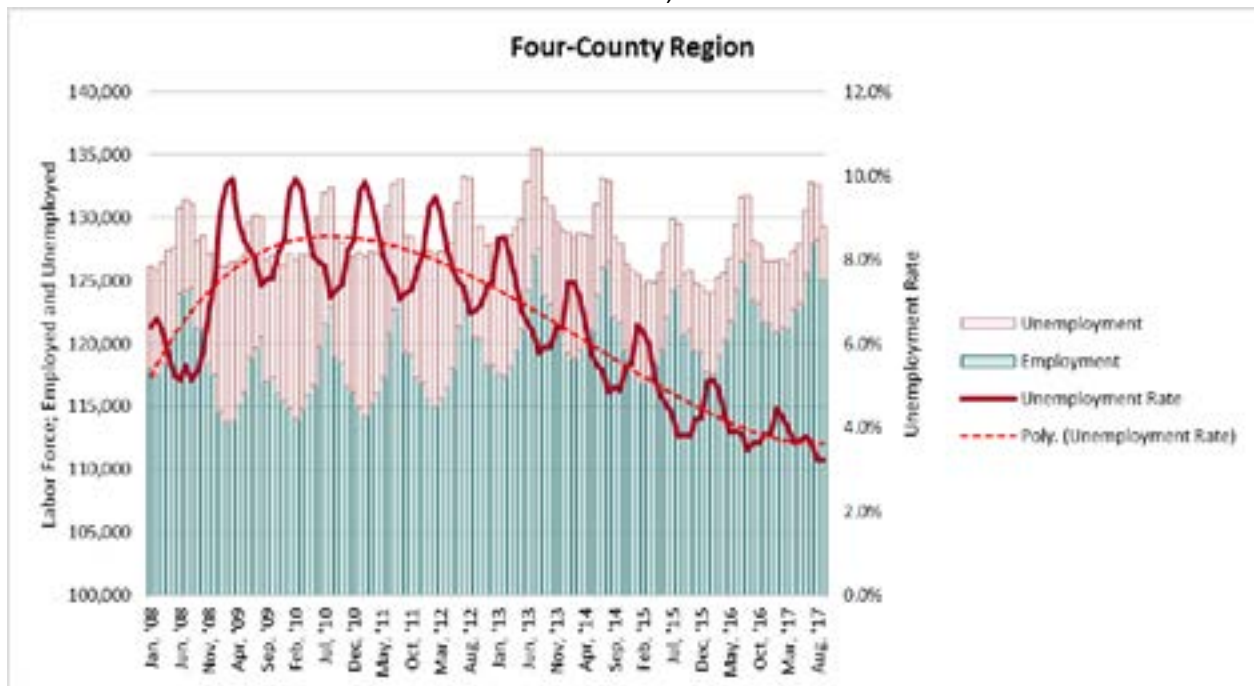


Figure 8 provides a general framework of the KVCC market area’s labor force; employment and unemployment, and the unemployment rate per month from January 2008 through September 2017. From the data, it can be surmised that the labor force increases at a rate of approximately 0.02 percent annually (Year-to-Year). The number of employed increases at approximately 0.29 percent annually. On a shorter timeframe, from 2012 onwards, the same growth percentages are -0.04 and 0.78 percent, respectively. Given that employment growth, and the rather flat growth in labor force, there’s a decrease in unemployment to approximately 3.2 percentage points (September 2017), or 3.8 percent on an annual basis (last Year-to-Date). Based on the same calculation, the comparative unemployment rate for Maine, is 3.5 percent.

FIGURE 8. STATE AND KVCC MARKET AREA CIVILIAN LABOR FORCE, EMPLOYMENT AND UNEMPLOYMENT, 2008-2017



Source: Maine Department of Labor, Center for Workforce Research & Information²⁰

Table 9 provides some current additional detail on labor force, employment, and unemployment, relative to each of the four counties in the KVCC market area.

²⁰ Maine Department of Labor, Center for Workforce Research & Information. Data retrieved from: <http://www.maine.gov/labor/cwri/laus1.html>

TABLE 9. CIVILIAN LABOR FORCE, EMPLOYMENT AND UNEMPLOYMENT BY COUNTY, OCTOBER 2016-SEPTEMBER 2017

	Kennebec County				Knox County				Somerset County				Waldo County			
	Civilian Labor Force	Employment	Unemployment	Unemployment Rate	Civilian Labor Force	Employment	Unemployment	Unemployment Rate	Civilian Labor Force	Employment	Unemployment	Unemployment Rate	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Oct, '16	62,384	60,302	2,082	3.3%	20,902	20,258	644	3.1%	23,644	22,419	1,225	5.2%	20,939	20,213	726	3.5%
Nov, '16	62,371	60,186	2,185	3.5%	20,292	19,583	709	3.5%	23,253	22,036	1,217	5.2%	20,647	19,874	773	3.7%
Dec, '16	62,275	60,245	2,030	3.3%	20,207	19,534	673	3.3%	23,365	22,033	1,332	5.7%	20,650	19,837	813	3.9%
Jan, '17	62,704	60,339	2,365	3.8%	19,951	19,093	858	4.3%	23,375	21,918	1,457	6.2%	20,518	19,569	949	4.6%
Feb, '17	62,830	60,544	2,286	3.6%	19,951	19,091	860	4.3%	23,405	22,029	1,376	5.9%	20,561	19,648	913	4.4%
Mar, '17	62,694	60,589	2,105	3.4%	20,008	19,224	784	3.9%	23,044	21,726	1,318	5.7%	20,535	19,680	855	4.2%
Apr, '17	62,997	61,059	1,938	3.1%	20,465	19,783	682	3.3%	23,126	21,880	1,246	5.4%	20,733	19,964	769	3.7%
Apr, '17	62,997	61,059	1,938	3.1%	20,465	19,783	682	3.3%	23,126	21,880	1,246	5.4%	20,733	19,964	769	3.7%
Jun, '17	63,743	61,499	2,244	3.5%	21,661	20,968	693	3.2%	23,800	22,600	1,200	5.0%	21,373	20,567	806	3.8%
Jul, '17	64,601	62,421	2,180	3.4%	22,342	21,702	640	2.9%	24,181	22,946	1,235	5.1%	21,705	20,906	799	3.7%
Aug, '17	64,057	62,097	1,960	3.1%	22,515	21,942	573	2.5%	24,223	23,174	1,049	4.3%	21,736	21,029	707	3.3%
Sep, '17	62,836	60,926	1,910	3.0%	21,583	21,002	581	2.7%	23,588	22,553	1,035	4.4%	21,294	20,626	668	3.1%

Source: Maine Department of Labor, Center for Workforce Research & Information

The following **Table 10** presents the US Census estimated occupations of the civilian employed population, in both the four-county region and the state of Maine. Shading is provided to show greater numbers in brick and fewer numbers in blue. Management, Business, Science, and Arts Occupations show the highest estimated number of occupations across the board; representing a third of the total for the KVCC market area, and 35 percent for the state of Maine.

TABLE 10. ESTIMATED OCCUPATION - CIVILIAN EMPLOYED POPULATION 16 YEARS AND OVER

OCCUPATION	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Management, Business, Science, and Arts Occupations	20,656	6,508	5,992	6,215	39,371	229,781
Service Occupations	10,181	3,424	4,071	3,672	21,348	120,088
Sales and Office Occupations	14,913	4,554	5,236	4,038	28,741	155,292
Natural Resources, Construction, and Maintenance Occupations	5,951	2,922	3,274	2,223	14,370	69,640
Production, Transportation, and Material Moving Occupations	6,086	1,862	3,702	2,233	13,883	73,886
Total Civilian Employed Population 16 years and over	57,787	19,270	22,275	18,381	117,713	648,687

The estimated industry civilian employed population 16 years and over is given in **Table 11**. Shading is provided to show greater numbers in brick and smaller numbers in blue, per industry. The brick shaded industries to the upper left (from Construction to Finance, and including Professional services), have lost employment in the four-county region. In 2015, all aforementioned show a blue shading, hence lower employment. Four sectors show an increase, with most employment added in “Educational services, and health care and social assistance.” Growth in this sector amounts to a total of 939 additional employed over the years shown, or 0.6 percent annually. The second sector showing growth is “Public administration,” showing a net gain in employment of 772 jobs over the years shown, or an annual growth of 2.1 percent. The third sector showing employment growth is “Arts, entertainment, and recreation, and accommodation and food services,” with a net gain of 739 employees, or an annual growth of 1.6 percent. The final sector showing an improvement in employment is “Agriculture, forestry, fishing and hunting, and mining” with an additional 190 employed over the six years shown. All growth industries mentioned above show a brick shading in the year 2015 column. Most employment is lost in “Construction,” marking a total loss in employees of 1,596 over the years shown, or a decline of 3.1 percent annually. “Retail Trade” lost 1,211 employees (-1.5% annually), and “Transportation and Warehousing, and Utilities” lost 994 employees (-4.1% annually). The shift in shading over time shows a relative, but evident, shift in employment demand, and hence in employee assets (e.g., requiring different education skillsets).

TABLE 11. KVCC MARKET AREA ESTIMATES ON INDUSTRY
CIVILIAN EMPLOYED POPULATION 16 YEARS AND OVER, 2010-2015

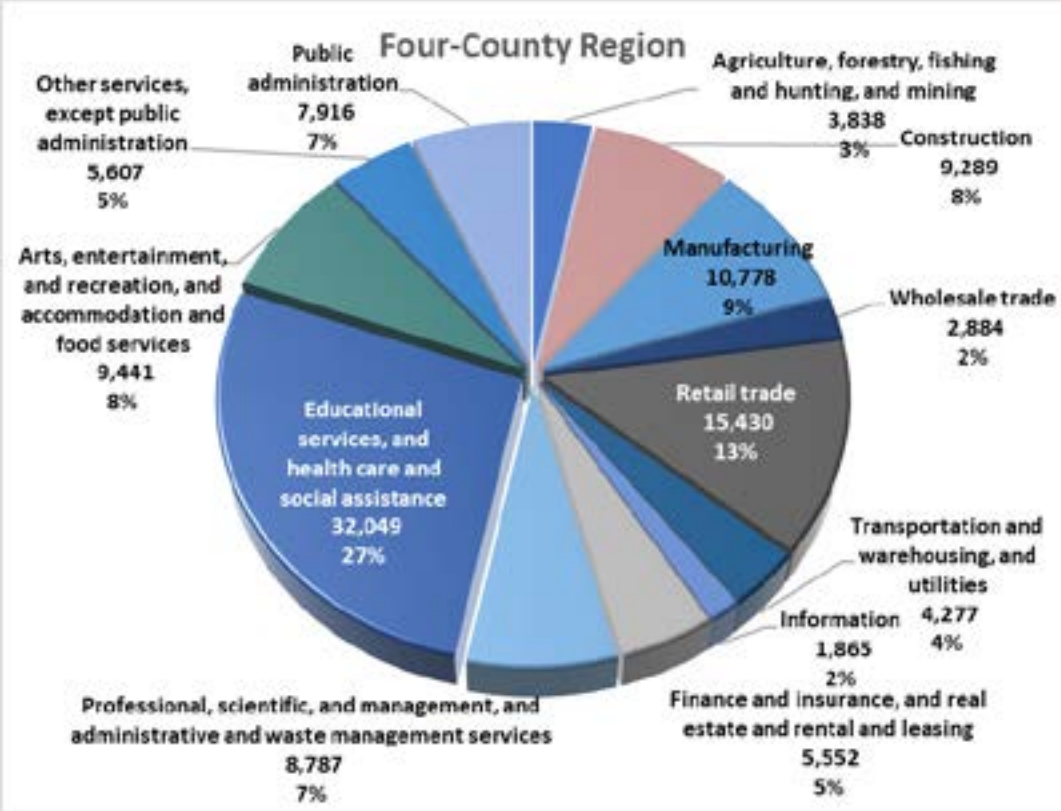
INDUSTRIES	Four-County Region					
	2010	2011	2012	2013	2014	2015
Agriculture, forestry, fishing and hunting, and mining	3,648	3,569	3,635	3,492	3,699	3,838
Construction	10,885	10,127	10,380	10,027	9,413	9,289
Manufacturing	11,521	11,342	10,614	11,004	10,941	10,778
Wholesale trade	3,324	3,114	3,113	3,042	2,963	2,884
Retail trade	16,651	16,673	16,050	15,745	15,575	15,430
Transportation and warehousing and utilities	5,271	5,096	5,109	4,354	4,274	4,277
Information	2,302	2,193	2,149	1,984	1,969	1,865
Finance and insurance, and real estate and rental and leasing	5,864	5,880	5,732	5,732	5,673	5,552
Professional, scientific, and management, and administrative and waste management services	9,030	9,144	9,325	8,988	8,965	8,787
Educational services, and health care and social assistance	31,110	31,095	30,864	30,876	31,177	32,049
Arts, entertainment, and recreation, and accommodation and food services	8,702	8,964	9,046	9,273	9,273	9,441
Other services, except public administration	6,154	6,043	5,842	5,761	5,567	5,607
Public administration	7,144	7,452	7,352	7,631	7,767	7,916
INDUSTRY TOTAL	121,606	120,692	119,211	117,909	117,256	117,713

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates ²¹

The following Figure presents the same KVCC four-county area industry employment data, including relative shares.

²¹ US Census, American fact Finder, 2011-2015 American Community Survey 5-Year Estimates. Data retrieved from <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmm>

FIGURE 9. KVCC FOUR-COUNTY AREA ESTIMATED EMPLOYMENT BY INDUSTRY SECTOR, 2015



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

The ratio of housing units in the KVCC market area versus the units for the state is 18.9, which is in line with the overall population ratio of 18.8. Comparing between years 2010 and 2016, the numbers show a growth of about 1.0 percent for the market area as opposed to 1.2 percent for the state. Both are significantly small with each experiencing a 0.2 percent annual growth. The rate of owner-occupied housing for the market area is calculated relative to the average units for years 2010-2016 and weighted accordingly over the counties. The market area shows a higher owner-occupancy ratio than that the state. The median value of owner-occupied housing units for the four-county region is similarly calculated. Within the KVCC market area, the values for Knox County turn out to be slightly higher than the values in the other counties. Overall, the four-county region shows lower values as compared to the state. Both owner-cost rows are calculated based on the average units for years 2010-2016, and weighted accordingly across the counties. Neither seems out of line with respect to Maine, with the exception of a marginally higher cost in Knox County. The median gross rents also aren't significantly different. The sum of building permits of the four-county region on the other hand seems to be rather low relative to the permits statewide. Expressed in a ratio relative to the Maine permits overall, the ratio is 11.3, comparative to the aforementioned 18.8 population ratio.

TABLE 12. HOUSING IN THE KVCC MARKET AREA, 2016 AND 2010

Housing	Kennebec County	Knox County	Somerset County	Waldo County	Four-County Region	Maine
Housing units, July 1, 2016	61,742	24,020	30,435	22,020	138,217	730,705
Housing units, April 1, 2010	60,972	23,744	30,569	21,566	136,851	721,830
Owner-occupied housing unit rate, 2011-2015	70.3%	76.4%	76.6%	77.5%	73.9%	71.2%
Median value of owner-occupied housing units, 2011-2015	\$ 150,600	\$ 197,000	\$ 107,300	\$ 157,800	\$ 150,195	\$ 173,800
Median selected monthly owner costs -with a mortgage, 2011-2015	\$ 1,191	\$ 1,335	\$ 1,019	\$ 1,190	\$ 1,178	\$ 1,336
Median selected monthly owner costs -without a mortgage, 2011-2015	\$ 453	\$ 518	\$ 383	\$ 432	\$ 445	\$ 477
Median gross rent, 2011-2015	\$ 691	\$ 764	\$ 684	\$ 744	\$ 711	\$ 777
Building permits, 2016	216	112	58	68	454	4,010

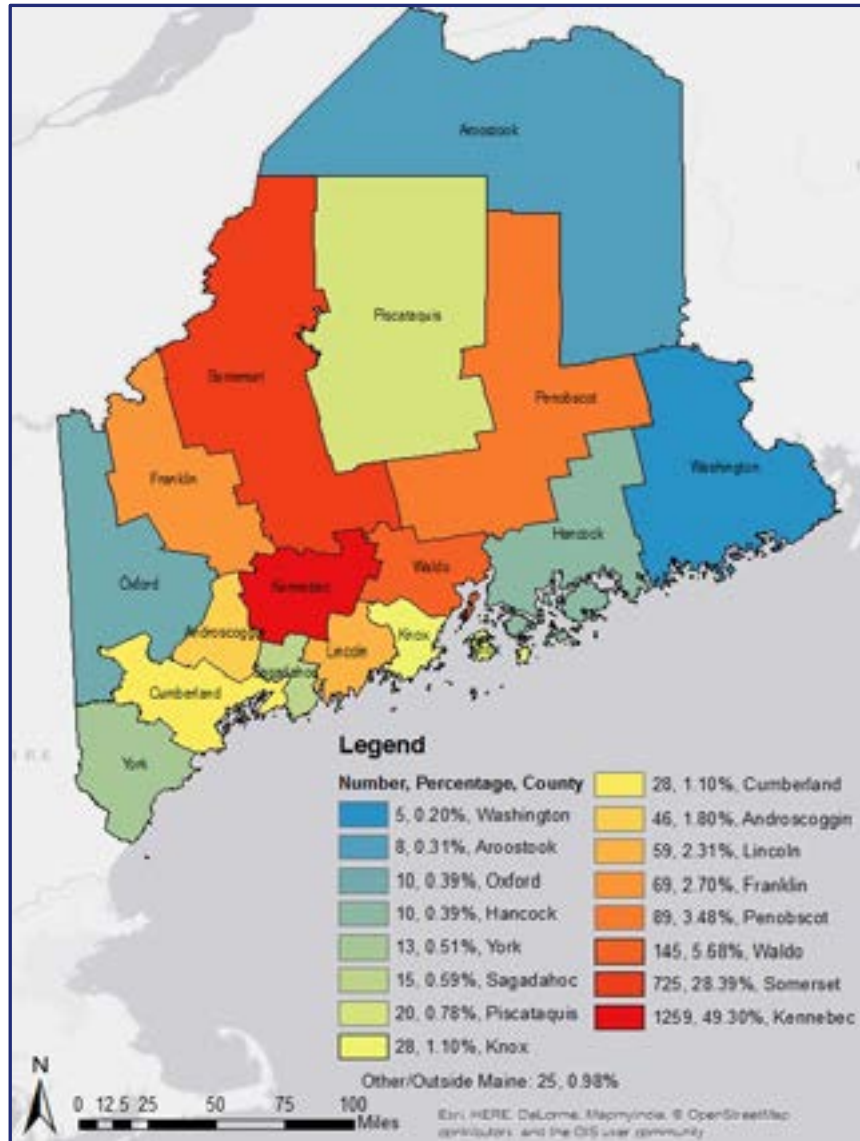
Source: US Census, QuickFacts data²²

²² US Census, QuickFacts data. Data retrieved from: <https://www.census.gov/quickfacts/fact/table/knoxcountymaine,waldocountymaine,somersetcountymaine,kennebeccountymaine,ME>

KVCC 2017 FALL STUDENT HEADCOUNT

The KVCC student headcount for Fall 2017 was 2,554.²³ The following figure(s) depict the students' county of residence. About half (49%) of the students reside in Kennebec County, with slightly over a third (or 35%) residing in Somerset, Waldo, and Knox counties (at 28%, 6% and 1% respectively).

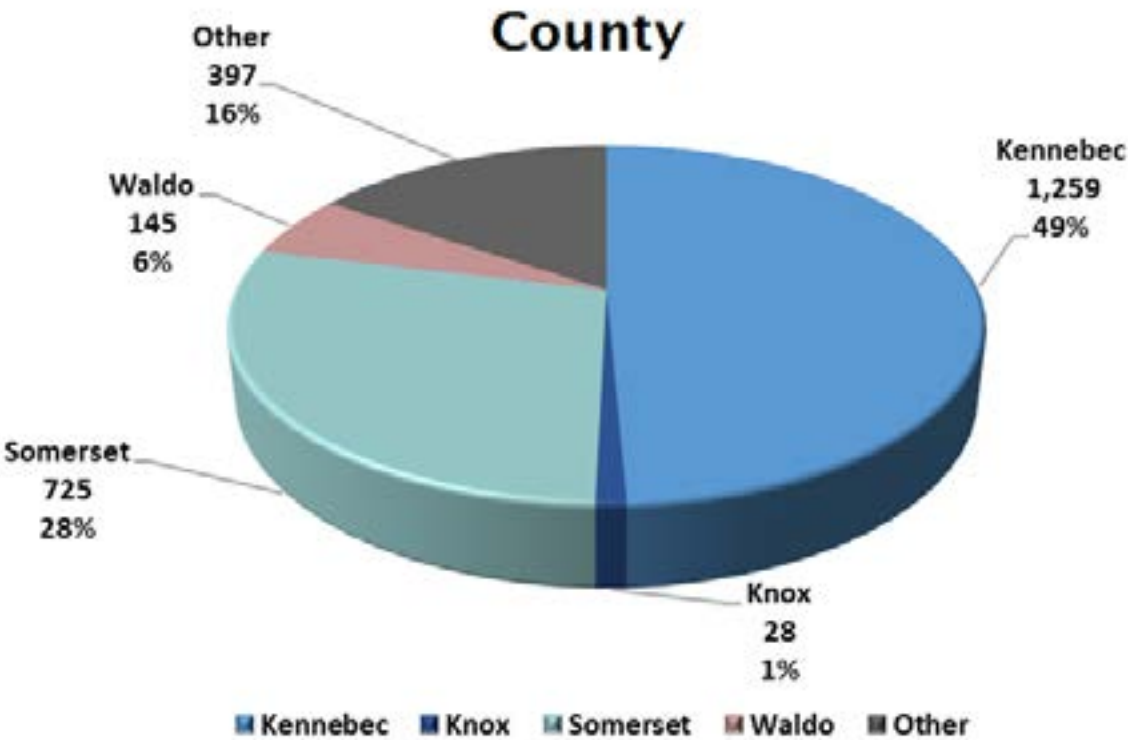
FIGURE 10. RESIDENCY FOR FALL 2017 KVCC STUDENTS



Sixteen percent of KVCC students originated from other counties outside the four-county market area.

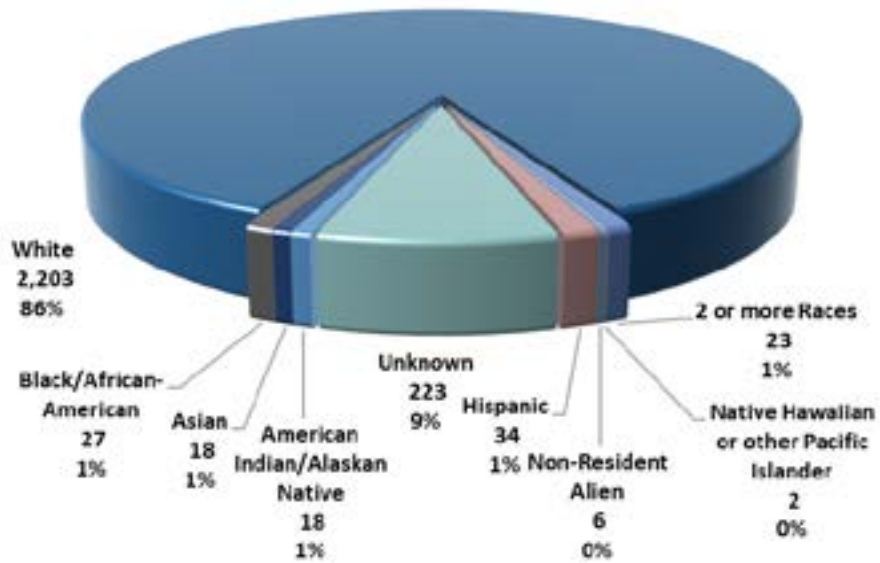
²³ Fall 2017 student headcount provided by the KVCC Director of Institutional Research.

FIGURE 11. KVCC STUDENTS FALL 2017 BY COUNTY OF RESIDENCE



As shown in the following **Figure 12**, 86 percent of the Fall 2017 student population are Caucasian (2,203), with approximately one percent each evenly distributed across the categories of: African American (27), American Indian/Alaskan Native (18), Hispanic (34), Asian (18), Two or more Races (23), where Native Hawaiian/Other (2), Non-Resident alien (6) are both zero percent. Racial identity is unknown for nine percent of KVCC students (223).

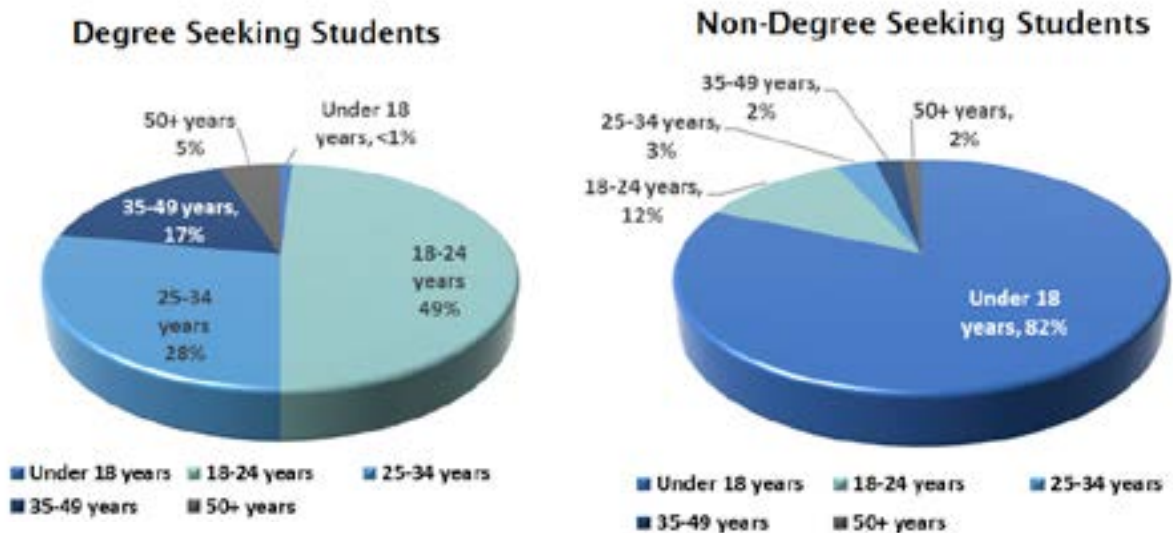
FIGURE 12. KVCC FALL 2017 STUDENTS BY RACE²⁴



As depicted in **Figure 13**, about half (49%) of the students in fall 2017 are between the ages of 18-24 years. Twenty-eight percent of the students are between the ages of 25 and 34 years, while 23 percent of the student population are aged 35 years or older. About 82 percent of the non-degree seeking group are 18 years or younger.

²⁴ Note that for the analyses within the report Fall 2016 data are used, and not the presented numbers in Figure(s) 11-13.

FIGURE 13. BY KVCC STUDENT AGE COHORT²⁵ IN FALL 2017



Approximately 66 percent, or two-thirds of the student population is female. This has remained consistent (ranging from 66% to 68% female) since fall 2009.

²⁵ Note that for the analyses within the report Fall 2016 data is used and not the presented numbers in Figure 13.

ECONOMIC IMPACT ANALYSIS METHODOLOGY

The total economic impact of KVCC-related spending was estimated with multipliers generated using a regional economic input-output model for the state of Maine constructed with the IMPLAN economic impact modeling system (IMPLAN Group, LLC, 2016).²⁶ IMPLAN is a widely accepted integrated input-output model, used extensively by state and local government agencies to measure proposed legislative and other program and policy economic impact across the private and public sectors.

There are several advantages to using IMPLAN:

- ◆ It is calibrated to local conditions using a relatively large amount of local county level and state of Maine specific data;
- ◆ It is based on a strong theoretical foundation; and
- ◆ It uses a well-researched and accepted applied economics impact assessment methodology supported by many years of use across all regions of the U.S.

The economic impact model used for this analysis was specifically developed for the counties of Maine, and includes 536 business sectors (based on the North American Industrial Classification System, or NAICS) and latest dataset – year 2016²⁷ data. IMPLAN’s principal advantage is that it may be used to estimate direct, indirect and induced economic impact for any static (point-in-time) economic stimulus. Through the estimation of economic multipliers, the “ripple” effects of supply chain spending for input purchases are captured (indirect effects), and household spending by employees (induced effects) for new final demand to the regional economy, as well as direct spending and employment. Economic multipliers for each business sector and household income category are used to estimate the following economic impact: economic output or revenue, employment (full-time and part-time jobs), value added (GDP), labor-income, among other economic impact.

ECONOMIC IMPACT MODEL INPUT DATA

The approach taken to this economic impact analysis was based primarily on input data from KVCC expenditures for FY2016-17. This methodology is a standard approach that has been used in previous economic impact research studies on higher education in other states. Expenditures for KVCC operations, personnel payroll, and capital improvements for fiscal year 2016-17, were taken from KVCC consolidated financial statements²⁸ (revenues, expenses, and changes in the net assets), with supplemental detail provided by KVCC financial staff. The KVCC-specific input data used for the economic modeling process included: payroll operations, current expenses, capital outlay, student spending, and recent graduate lifetime earnings. The respective expenditures were assigned to appropriate industry sector categories using NAICS, and further translated into IMPLAN-specific industry sectors in the economic impact model.

²⁶ IMPLAN Maine 2016 was just released in late November 2017.

²⁷ Year 2016 data was released at the end of November 2017.

²⁸ All expenses data was included. In addition, specific non-operating expenses were also included.

The economic impact of increased earnings received by KVCC graduates over their working lifetime, compared to Maine high school graduates were also estimated in this analysis. Data on personal earnings for Maine were obtained from the U.S. Census Bureau, Current Population Survey (CPS). Data was selected on Adult Civilian Workers, Personal Income by Age and Educational Attainment. The earnings differential for KVCC graduates was projected over a 30-year period, representing a typical working lifetime.

The average lifetime earnings differential was computed using the U.S. Census Bureau synthetic lifetime earnings methodology. This earnings estimation methodology was then expanded to reflect the total number of KVCC 2015-16 graduates. This method assumes a median salary structure of employed in Maine (to educational attainment and age) rather than extrapolating graduate starting salaries from the previous five or ten years' salaries in the labor force, as labor markets change. The analysis does not calculate present value (PV) of future incomes, but instead uses a present salary structure or matrix. An advantage of the method is that no assumptions are needed for potential future earnings, pricing adjustments or discount rates to use. Also, it reduces potential bias concerning samples (e.g. a selection bias, where the top graduating students are more likely to get timely job offers at likely higher wages). In addition, it provides greater definition on age group cohorts: ages 25-34 years, 35-44 years, 45-54 years and 55-64 years. The lifetime earnings methodology used does not account for the opportunity costs to KVCC graduates associated with attendance at other colleges.

Regarding each of the expenditures, the share of spending inside of Maine was based on the State's average percentage of total purchases of each particular good or service. These shares are known as regional purchase coefficients, which were econometrically estimated by the IMPLAN software based on the balance of supply and demand in the State for each product or service. The total economic contributions of KVCC-spending funded by new dollars represent the sum of the direct, indirect and induced impact multipliers applied to the portion of that spending that occurs inside the State. Any expenditures for capital improvement projects were treated as new final demand. The economic impact of spending by KVCC employees was based upon typical household expenditure patterns for public education workers. Student spending on tuition²⁹ was not included in the economic impact analysis to avoid double counting, since these dollars were accounted for in KVCC expenditure statements. Student spending were further separated by in-state and out-of-state students.³⁰ As there was no data available on student spending at KVCC, the research team used several assumptions³¹ to develop the estimations of student spending on the primary largest expense categories for students including: Gas/Fuel, Food, Utilities, and Rent. Sales by private vendors for campus food services, bookstores, and other concessions were also included in this analysis since their activity is captured in the spending of students. Retail margins were applied to purchases of goods at retail stores by students and employees.

²⁹ In addition to tuition, on-campus housing is typically not included in the analysis.

³⁰ The in-state to out-of-state student ratios were based on the Fall 2016 enrollment patterns and applied to estimate the overall in-state and out-of-state student spending (including the bookstore, and other student spending items).

³¹ For spending on gas/fuel, round-trip mileage was estimated, based on the Fall 2016 student enrollment (2,551 students) for the KVCC market area. For spending on gas, food and utilities, the team estimated spending from: <https://smartasset.com/mortgage/what-is-the-cost-of-living-in-Maine>. The average, median, and mode(s) for monthly rental rates for the KVCC market area were estimated from: <https://www.trulia.com>.

GRADUATE EMPLOYMENT AND EARNINGS

Average annual earnings and employment rates for KVCC students graduating in 2014-2016 with a Certificate (C) or an Associate degree (AS/AAS) are summarized in the following **Table 13**. The data was collected by KVCC whom surveyed the student graduate cohort used for this economic analysis. Although the table represents present earnings, it should be noted that the earnings are present earnings of a “past” cohort. As presented in **Table 13a**, the weighted median annual earnings for the same Maine KVCC graduate cohort is \$38,149, with some expected variation according to program cluster. Unfortunately, the survey results were not broken out by degree. The percentage of responding graduates who found employment in the same field of graduation is current.

TABLE 13. KVCC GRADUATE EMPLOYMENT DATA, ANNUAL MEAN AND MEDIAN EARNINGS BY PROGRAM, 2014-2016

Program	Number of Valid Surveys Mailed	Percent Response Rate	Percent of Responses Working in Field of Study	Mean Annual Earnings	Median Annual Earnings	Low Range	High Range
Allied Health & Nursing							
Advance Emergency Care	12	25%	100%	\$ 31,631	\$ 33,369	\$ 28,155	\$ 33,369
Advanced Emergency Care (Certificate)	42	5%	100%	\$ 21,898	\$ 21,898	\$ 21,898	\$ 21,898
Paramedic (Certificate)	25	20%	100%	\$ 37,540	\$ 38,583	\$ 33,369	\$ 38,583
Health Information Technology	40	35%	50%	\$ 34,263	\$ 33,369	\$ 21,898	\$ 51,097
Medical Assisting	52	31%	88%	\$ 28,453	\$ 28,155	\$ 21,898	\$ 51,097
Phlebotomy (Certificate)	41	20%	63%	\$ 25,652	\$ 28,155	\$ 21,898	\$ 28,155
Nursing	111	53%	100%	\$ 51,786	\$ 51,097	\$ 43,797	\$ 56,311+
Occupational Therapy Assistant	43	40%	82%	\$ 46,479	\$ 51,097	\$ 33,369	\$ 56,311+
Physical Therapy Assistant	47	36%	88%	\$ 46,995	\$ 51,097	\$ 38,583	\$ 56,311+
Radiological Technology	35	34%	83%	\$ 43,380	\$ 41,190	\$ 38,583	\$ 51,097
Respiratory Therapy	35	43%	93%	\$ 48,862	\$ 51,097	\$ 38,583	\$ 56,311+
Farm to Table							
Culinary Arts	8	38%	100%	\$ 31,284	\$ 33,369	\$ 21,898	\$ 38,583
Sustainable Agriculture	11	18%	50%	\$ 21,898	\$ 21,898	\$ 21,898	\$ 21,898
Trades & Technology							
Applied Electronics & Computer Technology	21	5%	100%	*		*	*
Electrical Line Worker Technology	75	20%	67%	\$ 46,613	\$ 51,097	\$ 33,369	\$ 56,311+
Electrical Technology	36	31%	91%	\$ 35,663	\$ 35,976	\$ 28,155	\$ 51,097
Electrical Technology (Certificate)	9	0%	N/A	N/A		N/A	N/A
Energy Services and Technology	36	25%	100%	\$ 33,948	\$ 33,369	\$ 33,369	\$ 38,583
Precision Machine Technology	27	26%	100%	\$ 38,583	\$ 38,583	\$ 28,155	\$ 43,797

TABLE 13. KVCC GRADUATE EMPLOYMENT DATA, ANNUAL MEAN AND MEDIAN EARNINGS BY PROGRAM, 2014-2016, CONT.

Program	Number of Valid Surveys Mailed	Percent Response Rate	Percent of Responses Working in Field of Study	Mean Annual Earnings	Median Annual Earnings	Low Range	High Range
Pulp & Paper Technology	24	50%	67%	\$ 50,575	\$ 51,097	\$ 38,583	\$ 51,097
Pulp & Paper Technology (certificate)	5	0%	N/A	N/A		N/A	N/A
Welding (certificate)	8	20%	100%	\$ 47,447	\$ 47,447	\$ 43,797	\$ 51,097
Business							
Business – Accounting	24	46%	36%	\$ 33,360	\$ 30,762	\$ 2,1898	\$ 51,097
Business – Marketing	62	37%	78%	\$ 33,717	\$ 30,762	\$ 21,898	\$ 56,311+
English & Humanities							
Liberal Studies	85	24%	5%	\$ 33,369	\$ 33,369	\$ 33,369	\$ 33,369
Math & Science							
General Sciences	28	14%	25%	\$ 21,898	\$ 21,898	\$ 21,898	\$ 21,898
Social Sciences							
Autism Spectrum Disorder Studies	8	38%	100%	\$ 33,022	\$ 38,583	\$ 21,898	\$ 38,583
Early Childhood Education	50	26%	62%	\$ 26,461	\$ 28,155	\$ 21,898	\$ 33,369
Mental Health	46	22%	90%	\$ 23,790	\$ 33,369	\$ 28,155	\$ 33,369
Total	1046	30%	77%				

* Response numbers too small to publicly report.

Source: (KVCC Measure 1.2d, Data First Form: Standard 8 Educational Effectiveness and Maine Community College System Goal 1, Objective 2, Measure 1).

TABLE 13A. SUMMARY GRADUATE EMPLOYMENT DATA WEIGHTED ANNUAL MEDIAN EARNINGS FOR KVCC GRADUATES BY PROGRAM CATEGORY, 2014-2016

Program	Weighted Median Annual Earnings
Allied Health & Nursing	\$ 40.866
Farm to Table	\$ 26.728
Trades & Technology	\$ 43.574
Business	\$ 30.762
English & Humanities	\$ 33.369
Math & Science	\$ 21.898
Social Sciences	\$ 31.263
Total	\$ 38,149

Source: (KVCC Measure 1.2d, Data First Form: Standard 8 Educational Effectiveness and Maine Community College System Goal 1, Objective 2, Measure 1)

It is noted that the cross-sectional median annual earnings of graduates represent early or entry-level earnings. **Table 14** provides the student enrollment and program per Fall 2014 to Fall 2016.

TABLE 14. FOR-CREDIT ENROLLMENTS BY PROGRAM, 2014-2016

	Award Type	# of Credits	Fall 2014	Fall 2015	Fall 2016
Allied Health & Nursing					
Advanced Emergency Care	AAS	69	9	3	3
Advanced Emergency Care	C	12	10	9	11
Paramedic	C	28	5	14	16
Health Information Technology	AAS	68	36	37	40
Medical Assisting	AAS	64	37	32	43
Phlebotomy	C	21	16	16	16
Medical Coding	C	34	1	4	5
Nursing	AS	69	94	82	74
Occupation Therapy Assistant	AAS	70	35	40	37
Physical Therapy Assistant	AAS	67	39	38	39
Radiologic Technology	AS	75	29	30	33
Respiratory Therapy	AS	73	24	27	14
Sonography	C	54	23	8	0
Farm To Table					
Culinary Arts	AAS	62	22	44	35
Sustainable Agriculture	AAS	63	21	30	36
Trades and Technology					
Applied Electronics & Computer Technology	AAS	62	29	31	34
Applied Electronics & Computer Technology	C	25	1	0	1
Applied Electronics & Computer Tech - Engineering Tech	AAS	64	2	1	0
Applied Engineering Tech	AAS	64	5	7	5
Electrical Line-worker Technology	C	34	27	33	28
Electrical Technology	AAS	64	35	32	37
Electrical Technology	C	34	3	11	11
Energy Services and Technology	AAS	66	30	37	32
Precision Machine Technology	AAS	61	28	37	30
Precision Machine Technology	C	32	3	2	2
Pulp & Paper Technology	AAS	63/64	35	13	5
Pulp & Paper Technology	C	33/34	2	3	0
Sustainable Construction	C	62	0	4	9
Welding	C	33	0	10	16
Business					
Accounting	AAS	69	56	44	58
Computer Systems Integration	AAS	63	8	29	32
Marketing/Management	AAS	63	103	101	104
English & Humanities					
Career Studies	AAS	69	0	1	2
Liberal Studies	AA	61/62	206	221	201

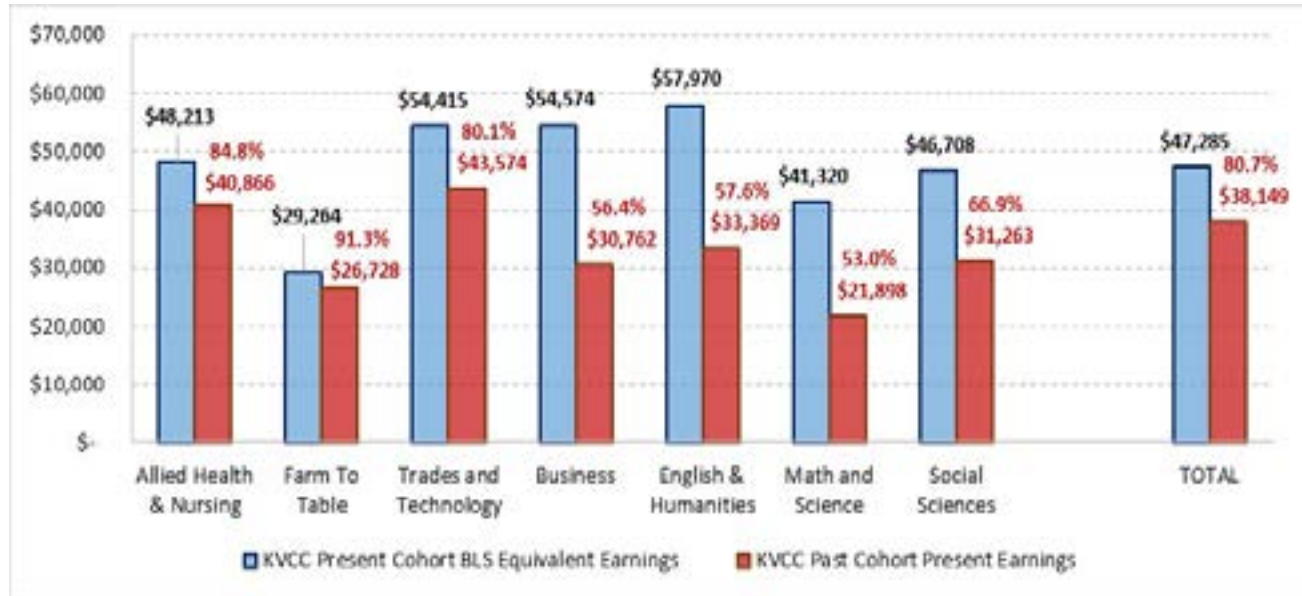
TABLE 14. FOR-CREDIT ENROLLMENTS BY PROGRAM, 2014-2016, CONT.

	Award Type	# of Credits	Fall 2014	Fall 2015	Fall 2016
Math and Science					
Biological Sciences	AS	60/61	4	0	0
Computer Aided Drafting & Design	AS	61/62	7	3	0
Computer Information Systems	AS	60/62	31	7	4
Computer Information Systems	C	27	1	1	1
General Science-Biology	AS	65/67	18	23	32
General Science-Health	AS	60/63	356	354	372
General Science-Pre-pharmacy	AS	62	5	1	4
Social Sciences					
Autism Spectrum Disorder Studies	AAS	62	12	12	14
Early Childhood Education	AAS	63	76	76	81
Mental Health	AAS	62	91	98	87
Mental Health	C	31	0	1	10
Speech/Language	AAS	62	5	3	0
Total Enrollment of Degree-Seeking Students			1580	1610	1613
Undeclared Students			821	840	938
Total Enrollment of ALL Credit Students			2401	2450	2551

Source: KVCC Annual-Fact-Book 2015-2016.

A general approximation on earnings was derived from **Figure 14**, using a crosswalk of program *Classification of Instructional Programs* (CIP) codes, to Standard Occupational Classification (SOC) codes,³² in addition to using the Bureau of Labor Statistics Median earnings in the State of Maine (blue bars).³³ Next, comparable KVCC survey data on past cohorts (years 2014-2016) was similarly analyzed (red bars). Both weighted averages, and associated percentages, are provided in the following figure.³⁴

FIGURE 14. COMPARISON OF PROGRAM EQUIVALENT EARNINGS, DIFFERENT COHORTS AND SAMPLES



³² Using KVCC provided SIC codes and crosswalk to SOC according to: www.ode.state.or.us/teachlearn/pte/finalsococipcrosswalk_022811.xls

³³ May 2016 State Occupational Employment and Wage Estimates, of the state of Maine, data derived from https://www.bls.gov/oes/current/oes_me.htm

³⁴ May 2016 State Occupational Employment and Wage Estimates, of the state of Maine, data derived from https://www.bls.gov/oes/current/oes_me.htm

To obtain a suitable combination of Educational Attainment and age cohorts, data for Maine was extracted from the U.S. Census Bureau; Current Population Survey (CPS).³⁵ The extracted data represents approximately 729,000 individuals, but caution is warranted given that some cell sizes are smaller as there are 624 occupations. The combination of the extracted data provides the opportunity to calculate synthetic life-time earnings; where “synthetic” lifetime earnings is created by using the working population’s annual earnings and summing their age-specific average earnings. The result totals represent what individuals with the same educational level could expect to earn, on average, in today’s dollars. This methodology precludes making unnecessary assumptions on future earnings and discount rates.³⁶ The estimated data points were deemed valid by the research team,³⁷ and were used to calculate the following regression plane. ³⁸ ³⁹

³⁵ U.S. Census Bureau, Current Population Survey (CPS), data selected on year 2017, Adult Civilian Workers, Personal Income by Age and Educational Attainment, and is retrieved from:

<https://www.census.gov/cps/data/cpstablecreator.html>

³⁶ See the U.S. Census Bureau, J.C Day and Mewburger E.C., The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings, July 2002

³⁷ The CPS Census Maine sub-samples per age/educational attainment cut-off was 37,000, which given the potential of 624 different occupations, results in about 60 observations per occupation. In addition, three other data-points with over 37,000 observations each were dropped as the average earnings were determined by the research team to be outliers or biased observations. The eleven points eventually used represent almost 390,000 FT workers in Maine.

³⁸ As base for the regression plane uses the following function (CES production function with relaxed share parameters):

$$Q = a(f(A))^r + g(E)^{1/r}$$

where: Q is annual personal income; A is age by class index (1 for ages 25 to 34, 2 for ages 35 to 44, 3 for ages 45 to 54, 4 for ages 55 to 59 and 5 for ages 60 to 64) and;

$$f(A) = (40,287.97 * \text{age.index} / (0.6259 * \text{age.index}^{1.5530} - 1.4771) + 5,097.15)$$

E is education by class index (3 for High School, 4 for Some College less than 4-yr degree, and 6 for Bachelor’s degree or higher) and;

$$g(E) = 5,097.15 - 1,968.86 * \text{ed.index} + 1,855.00 * \text{ed.index}^2$$

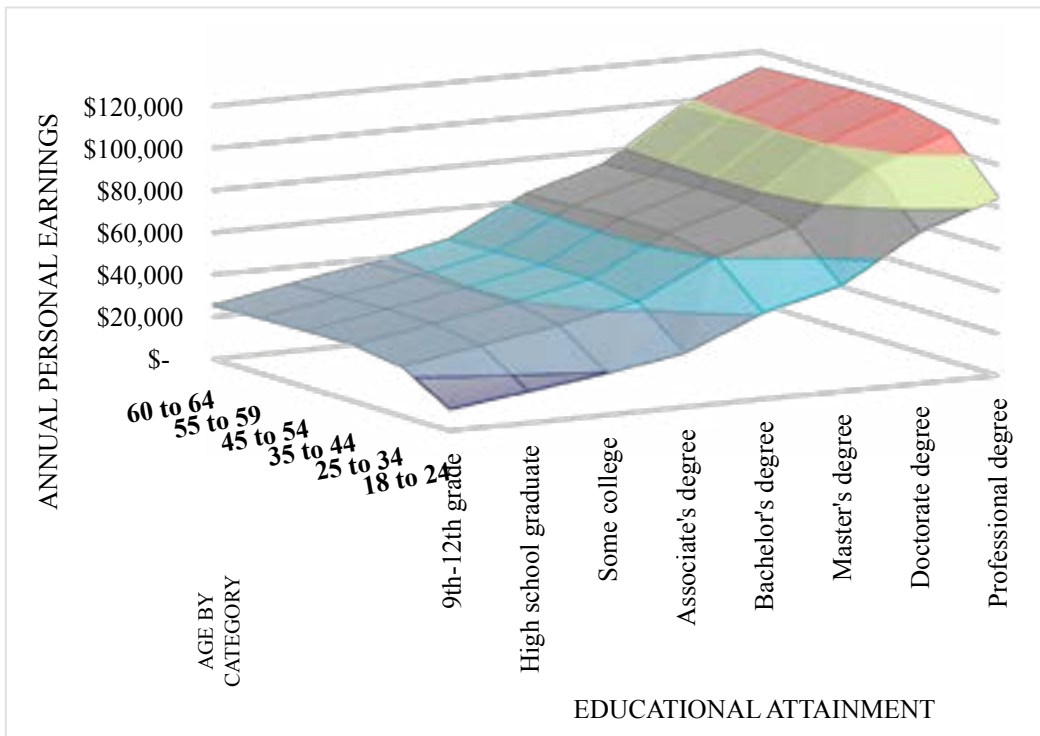
r is degree of substitutability (experience with age versus educational attainment)

$$r = 0.6634$$

The parameters were developed using OLS, with a final R²=0.99534; and a standard error of \$ 2,105.62

³⁹ In Figure 2 shown, Associate degrees are given an education index of 4.5 (midpoint between 3 and 6, i.e. High School and a 4-yr Bachelor resulting in effectively two-years study at a Community College) and Certificate degrees (i.e., some College) an education index of 3.75 (midpoint between 3 and 4.5, i.e. High School and Associates Degrees or one year of Community College study), respectively.

FIGURE 15. ESTIMATED REGRESSION PLANE ON MAINE'S PERSONAL EARNINGS, BY AGE COHORT AND EDUCATIONAL ATTAINMENT



The relevant data range is provided in the following **Table 15**.

TABLE 15. MAINE ESTIMATED ANNUAL EARNINGS BY AGE COHORT AND EDUCATIONAL ATTAINMENT

Age (years)	High School Graduate	Some College	Associate's Degree	Bachelor's Degree	Master's Degree	Doctorate Degree	Professional Degree
18 to 24	\$ 14,936	\$ 19,839	\$ 25,834	\$ 41,049	\$ 50,263	\$ 71,902	\$ 84,328
25 to 34	\$ 29,684	\$ 35,755	\$ 42,959	\$ 60,618	\$ 71,043	\$ 95,059	\$ 108,648
35 to 44	\$ 33,218	\$ 39,509	\$ 46,945	\$ 65,080	\$ 75,744	\$ 100,234	\$ 114,058
45 to 54	\$ 33,372	\$ 39,672	\$ 47,118	\$ 65,273	\$ 75,947	\$ 100,458	\$ 114,291
55 to 59	\$ 32,645	\$ 38,902	\$ 46,301	\$ 64,362	\$ 74,988	\$ 99,403	\$ 113,189
60 to 64	\$ 31,740	\$ 37,941	\$ 45,282	\$ 63,222	\$ 73,787	\$ 98,082	\$ 111,809

Given the regression plane, intermediate ages may be calculated as well. For synthetic lifetime earnings, the following is based on comparative age-ranges per the age of 31; which is the average age of students leaving KVCC (after obtaining a degree), hence the age where the differentials (between KVCC-degree and high school) begin. Table 16 provides an overall estimate on the remainder of life-time earnings of 34 years personal income and differentials (second row) compared with high school graduate earnings. As depicted in the following Table, KVCC graduates with some college (or certificate degrees) annually earned an average of \$6,255 more than high school graduates, associate degrees averaged \$13,654 more, and bachelor’s degrees averaged \$31,713 more than high school graduates.⁴⁰

TABLE 16. MAINE ESTIMATED ANNUAL EARNINGS DIFFERENTIATED BY EDUCATIONAL ATTAINMENT

	High School Graduate	Some College	Associate's Degree	Bachelor's Degree	Master's Degree	Doctorate Degree	Professional Degree
to 65 (= 34yrs)	\$ 1,109,723	\$ 1,322,408	\$ 1,573,960	\$ 2,187,956	\$ 2,549,217	\$ 3,379,272	\$ 3,847,984
Differential compared to high school graduates		\$ 212,685	\$ 464,236	\$ 1,078,232	\$ 1,439,494	\$ 2,269,549	\$ 2,738,260

As shown in **Table 17**, the data were next divided in decennial brackets of ten, twenty, and thirty-year cumulative brackets. Over a 30-year period, an individual with; e.g. an associate degree, is projected to earn an average of about \$410,116 more than an individual with a high school degree.

⁴⁰ \$212,685/34, \$464,236/34 and \$1,078,232/34, respectively.

TABLE 17. AVERAGE INDIVIDUAL LIFETIME EARNINGS FOR MAINE HIGH SCHOOL AND KVCC GRADUATES

Degree	Estimated Lifetime Earnings Over Time		
	10 Years	20 Years	30 Years
High School Graduate	\$ 321,121	\$ 655,453	\$ 983,123
Some College	\$ 383,353	\$ 780,722	\$ 1,171,027
Associate's Degree	\$ 456,998	\$ 928,863	\$ 1,393,239
Bachelor's Degree	\$ 636,885	\$ 1,290,385	\$ 1,935,523
Master's degree	\$ 742,787	\$ 1,503,067	\$ 2,254,546
Doctorate degree	\$ 986,222	\$ 1,991,683	\$ 2,987,470
Professional degree	\$ 1,123,734	\$ 2,267,567	\$ 3,401,297
Differential compared to High School Graduates			
Some College	\$ 62,231	\$ 125,269	\$ 187,904
Associate's Degree	\$ 135,877	\$ 273,409	\$ 410,116
Bachelor's Degree	\$ 315,764	\$ 634,932	\$ 952,400
Master's degree	\$ 421,665	\$ 847,614	\$ 1,271,423
Doctorate degree	\$ 665,101	\$ 1,336,229	\$ 2,004,347
Professional degree	\$ 802,612	\$ 1,612,114	\$ 2,418,174

It is projected that graduates in each degree category will continue to add value (GDP) to Maine's economy by virtue of their lifetime earnings. It is estimated that the synthetic lifetime earnings attributed to 1,613 present KVCC graduates in total, as reported earlier in this report) will top \$603 million of value (GDP) over the next 30 years, or approximately \$20.1 million annually in 2016 dollars (age undifferentiated).⁴¹

⁴¹ The applicable students (or graduate pool) were proportionally distributed over certificate and AS/AAS degrees (117 and 1,496, respectively) - which totals 1,613 KVCC students in Fall 2016 as the base for calculation - times \$187,904 and \$410,116, respectively (last column differentials with high school graduates in Table 17), equals \$21,984,798 and \$613,533,232, respectively, or \$635,518,030 in total. Age un-differentiated over 30-years results in \$21,183,934 annually.

ECONOMIC IMPACT RESULTS AND CONCLUSIONS

The total economic impact of KVCC, for one year, including regional economic multiplier effects arising from supply chain activity (indirect effects) and employee household spending (induced effects) for new final demand generated by KVCC operations, capital improvements, student spending, and 30-year lifetime earnings differential of graduates, is summarized in the following tables.

The economic impact of KVCC operations in 2016-17, including economic multiplier effects arising from supply chain activity (indirect effects) and employee household spending (induced effects), is presented in **Table 18**. KVCC's economic impact was estimated at \$47 million in output or revenues, \$33.5 million in value added (GDP), and 468 full-time and part-time jobs.

TABLE 18. SUMMARY OF KVCC ECONOMIC IMPACT BY OPERATIONAL ACTIVITY

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC Operations & Payroll	\$ 31,674,050	\$ 22,814,590	372	\$ 16,147,581
Student Spending (instate & out-of-state)	\$ 15,443,049	\$ 10,691,614	96	\$ 1,445,396
Total	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977

Notes: Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures; IMPLAN software and state/county data. Employment includes full-time and part-time jobs.

From a benefit/cost perspective, as shown in **Table 19**, for every dollar of industry output resulting from a \$6.8 million state investment in KVCC, \$4.18 is generated in economic activity by KVCC for the State of Maine.

TABLE 19. KVCC'S BENEFIT COST RATIO RELATING TO THE STATE INVESTMENT OR OPPORTUNITY COST

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC State Investment (Cost)	\$ 11,266,681	\$ 6,792,289	108	\$ 5,132,048
KVCC Economic Impacts (Benefit)	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977
Benefit/Cost Ratio	4.18	4.93	4.33	3.43

NOTE: When compared with recent economic impact studies from other community colleges and state universities, KVCC is in the range of standard benefit/cost ratios using IMPLAN (e.g., Grand Rapids Community College in MI: 4.2 to Montgomery County Community College in PA: 6.0). Other benefit/cost studies not using IMPLAN (and without transparent or easily replicable methodologies) were found to have benefit/cost ratios ranging from: 2.5 (University of Texas - Austin) to 12.8 (Ozarka College, AR).

Notes: Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures; IMPLAN software and state/county data. Employment includes full-time and part-time jobs.

A large share of the total economic impact of the College was attributed to the projected increased lifetime earnings of the 2016 KVCC degree-seeking student cohort compared to the earnings of high school graduates. With approximately 90% of KVCC students remaining in Maine, it is likely the increased earnings would be spent within the state according to typical patterns prevailing for the Maine labor force. Fiscal year 2015-16 was the latest available information on graduate earnings. In 2017, the lifetime earnings impact of the KVCC student cohort were projected at \$1.06 billion in output, \$603 million in value added (GDP), 8,660 full-time and part-time jobs, and \$315 million in labor income, as shown in **Table 20**.

Based on this one year snapshot, the estimated value of the 30-year lifetime earnings differential for the 2016 KVCC cohort (1,613 students) compared to their counterparts who only earned a high school degree COMBINED with the State FY2017 annual economic impact of KVCC is **\$1.1 billion** in output, **\$636 value added (GDP)** and **9,128 full- and part-time jobs**, generating an **income of over \$330 million dollars**.

TABLE 20. KVCC ECONOMIC IMPACT
INCLUDING PROJECTED LIFETIME EARNINGS OF DEGREE-SEEKING STUDENT COHORT

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC Operations, Payroll, and Student Spending Subtotal	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977
Lifetime Earnings (30 years)	\$ 1,055,012,668	\$ 602,868,058	8,660	\$ 315,355,374
Grand Total	\$ 1,102,129,767	\$ 636,374,262	9,128	\$ 332,948,351

Notes: Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures; IMPLAN software and state/county data. Employment includes full-time and part-time jobs.

In summary, KVCC is an important contributor to Maine’s economy both directly and indirectly through spending for payroll, operations, capital improvements, student living expenses, increased student earnings (over 30 years) and spending by degree-completers.

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APPENDIX A

Following are two tables with breakouts of NAICS three-digit industry codes relating to employment in the four-county region (Kennebec, Knox, Somerset and Waldo Counties). It should be noted that the source data used in this compilation is the National Establishment Time Series (NETS) Database (2014) which is different than the U.S. Census data used in the main report.

Table A-1 indicates the number of establishments, total number of employees and cumulative sales in the region by industry for 2014. The last three columns shown (e.g., count, employment and sales) pertain to the percentages relative to the total industry count, employment and sales.

Note: The medical/healthcare industry breakouts are identified as NAICS codes: 621, 622, and 623.

Table A-1. FOUR-COUNTY REGION ESTIMATES BY INDUSTRY SECTOR, 3-DIGIT NAICS, EMPLOYED AND SALES, INCLUDING RELATIVE SHARES, 2014

	NAICS	Count	Employment	Sales (\$ millions)	Count	Employment	Sales
	(Sector) Business				%	%	%
111	Crop Production	319	628	\$38.6	1.7%	0.4%	0.3%
112	Animal Production and Aquaculture	36	264	\$103.1	0.2%	0.2%	0.8%
113	Forestry and Logging	319	628	\$38.6	1.7%	0.4%	0.3%
114	Fishing, Hunting and Trapping	36	264	\$103.1	0.2%	0.2%	0.8%
115	Support Activities for Agriculture and	319	628	\$38.6	1.7%	0.4%	0.3%
211	Oil and Gas Extraction	36	264	\$103.1	0.2%	0.2%	0.8%
212	Mining (except Oil and Gas)	319	628	\$38.6	1.7%	0.4%	0.3%
213	Support Activities for Mining	36	264	\$103.1	0.2%	0.2%	0.8%
221	Utilities	319	628	\$38.6	1.7%	0.4%	0.3%
236	Construction of Buildings	36	264	\$103.1	0.2%	0.2%	0.8%
237	Heavy and Civil Engineering Construction	319	628	\$38.6	1.7%	0.4%	0.3%
238	Specialty Trade Contractors	36	264	\$103.1	0.2%	0.2%	0.8%
311	Food Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
312	Beverage and Tobacco Product	36	264	\$103.1	0.2%	0.2%	0.8%
313	Textile Mills	319	628	\$38.6	1.7%	0.4%	0.3%
314	Textile Product Mills	36	264	\$103.1	0.2%	0.2%	0.8%
315	Apparel Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
316	Leather and Allied Product Manufacturing	36	264	\$103.1	0.2%	0.2%	0.8%
321	Wood Product Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
322	Paper Manufacturing	36	264	\$103.1	0.2%	0.2%	0.8%
323	Printing and Related Support Activities	319	628	\$38.6	1.7%	0.4%	0.3%
324	Petroleum and Coal Products Manufacturing	36	264	\$103.1	0.2%	0.2%	0.8%
325	Chemical Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
326	Plastics and Rubber Products Manufacturing	36	264	\$103.1	0.2%	0.2%	0.8%
327	Nonmetallic Mineral Product Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
331	Primary Metal Manufacturing	36	264	\$103.1	0.2%	0.2%	0.8%
332	Fabricated Metal Product Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
333	Machinery Manufacturing	36	264	\$103.1	0.2%	0.2%	0.8%
334	Computer and Electronic Product	319	628	\$38.6	1.7%	0.4%	0.3%
335	Electrical Equipment, Appliance, and Component Manufacturing	36	264	\$103.1	0.2%	0.2%	0.8%
336	Transportation Equipment Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
337	Furniture and Related Product	36	264	\$103.1	0.2%	0.2%	0.8%
339	Miscellaneous Manufacturing	319	628	\$38.6	1.7%	0.4%	0.3%
423	Merchant Wholesalers, Durable Goods	36	264	\$103.1	0.2%	0.2%	0.8%
424	Merchant Wholesalers, Nondurable Goods	319	628	\$38.6	1.7%	0.4%	0.3%
441	Motor Vehicle and Parts Dealers	36	264	\$103.1	0.2%	0.2%	0.8%
442	Furniture and Home Furnishings Stores	319	628	\$38.6	1.7%	0.4%	0.3%
443	Electronics and Appliance Stores	36	264	\$103.1	0.2%	0.2%	0.8%
444	Building Material and Garden Equipment and Supplies Dealers	319	628	\$38.6	1.7%	0.4%	0.3%
445	Food and Beverage Stores	36	264	\$103.1	0.2%	0.2%	0.8%

446	Health and Personal Care Stores	319	628	\$38.6	1.7%	0.4%	0.3%
447	Gasoline Stations	36	264	\$103.1	0.2%	0.2%	0.8%
	NAICS	Count	Employment	Sales (\$ millions)	Count	Employment	Sales
	(Sector) Business				%	%	%
448	Clothing and Clothing Accessories Stores	136	722	\$63.9	0.7%	0.5%	0.5%
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	202	814	\$61.5	1.1%	0.5%	0.5%
452	General Merchandise Stores	91	2,406	\$345.7	0.5%	1.5%	2.7%
453	Miscellaneous Store Retailers	444	1,290	\$107.7	2.3%	0.8%	0.8%
454	Nonstore Retailers	137	928	\$187.5	0.7%	0.6%	1.5%
481	Air Transportation	3	9	\$1.0	0.0%	0.0%	0.0%
482	Rail Transportation	3	180	\$29.6	0.0%	0.1%	0.2%
483	Water Transportation	4	30	\$1.6	0.0%	0.0%	0.0%
484	Truck Transportation	239	905	\$76.5	1.3%	0.6%	0.6%
485	Transit and Ground Passenger	41	502	\$20.3	0.2%	0.3%	0.2%
487	Scenic and Sightseeing Transportation	11	26	\$1.7	0.1%	0.0%	0.0%
488	Support Activities for Transportation	149	618	\$46.1	0.8%	0.4%	0.4%
491	Postal Service	92	821	\$0.2	0.5%	0.5%	0.0%
492	Couriers and Messengers	13	118	\$10.7	0.1%	0.1%	0.1%
493	Warehousing and Storage	39	334	\$24.7	0.2%	0.2%	0.2%
511	Publishing Industries (except Internet)	71	647	\$41.3	0.4%	0.4%	0.3%
512	Motion Picture and Sound Recording	51	241	\$12.7	0.3%	0.2%	0.1%
515	Broadcasting (except Internet)	5	39	\$3.6	0.0%	0.0%	0.0%
517	Telecommunications	64	761	\$85.5	0.3%	0.5%	0.7%
518	Data Processing, Hosting, and Related	16	78	\$12.0	0.1%	0.0%	0.1%
519	Other Information Services	69	463	\$10.9	0.4%	0.3%	0.1%
522	Credit Intermediation and Related Activities	163	4,667	\$827.1	0.9%	2.9%	6.4%
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	102	235	\$23.4	0.5%	0.1%	0.2%
524	Insurance Carriers and Related Activities	134	621	\$79.5	0.7%	0.4%	0.6%
525	Funds, Trusts, and Other Financial Vehicles	7	141	\$41.0	0.0%	0.1%	0.3%
531	Real Estate	539	1,985	\$149.8	2.8%	1.2%	1.2%
532	Rental and Leasing Services	135	661	\$81.0	0.7%	0.4%	0.6%
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	6	18	\$1.5	0.0%	0.0%	0.0%
541	Professional, Scientific, and Technical	1,535	4,280	\$323.7	8.0%	2.7%	2.5%
551	Management of Companies and Enterprises	14	290	\$32.5	0.1%	0.2%	0.3%
561	Administrative and Support Services	3,579	8,458	\$518.3	18.8	5.3%	4.0%
562	Waste Management and Remediation	81	373	\$29.4	0.4%	0.2%	0.2%
611	Educational Services	491	14,871	\$1,114.2	2.6%	9.3%	8.6%
621	Ambulatory Health Care Services	902	11,044	\$986.3	4.7%	6.9%	7.7%
622	Hospitals	49	9,938	\$1,114.4	0.3%	6.2%	8.6%
623	Nursing and Residential Care Facilities	100	3,397	\$164.7	0.5%	2.1%	1.3%
624	Social Assistance	451	2,724	\$109.4	2.4%	1.7%	0.8%
711	Performing Arts, Spectator Sports, and Related Industries	137	277	\$39.5	0.7%	0.2%	0.3%
712	Museums, Historical Sites, and Similar	85	379	\$16.6	0.4%	0.2%	0.1%
713	Amusement, Gambling, and Recreation	213	1,367	\$56.9	1.1%	0.9%	0.4%
721	Accommodation	275	2,325	\$108.3	1.4%	1.5%	0.8%

722	Food Services and Drinking Places	482	6,021	\$196.9	2.5%	3.8%	1.5%
811	Repair and Maintenance	712	1,849	\$127.2	3.7%	1.2%	1.0%
	NAICS	Count	Employment	Sales (\$ millions)	Count	Employment	Sales
	(Sector) Business				%	%	%
812	Personal and Laundry Services	520	1,350	\$43.4	2.7%	0.8%	0.3%
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	747	3,937	\$343.3	3.9%	2.5%	2.7%
921	Executive, Legislative, and Other General Government Support	176	11,434	\$0.0	0.9%	7.2%	0.0%
922	Justice, Public Order, and Safety Activities	171	4,670	\$8.2	0.9%	2.9%	0.1%
923	Administration of Human Resource	80	5,182	\$0.4	0.4%	3.3%	0.0%
924	Administration of Environmental Quality	49	2,361	\$-	0.3%	1.5%	0.0%
925	Administration of Housing Programs, Urban Planning, and Community Development	4	67	\$-	0.0%	0.0%	0.0%
926	Administration of Economic Programs	91	6,603	\$3.3	0.5%	4.1%	0.0%
928	National Security and International Affairs	18	598	\$3.8	0.1%	0.4%	0.0%
999	N/A	236	1,536	\$0.3	1.2%	1.0%	0.0%
		19,07	159,306	\$12,884.9	100%	100%	100%

Table A-2 reflects the growth of the industries in the four-county region from years 2004-2014. The last column (year to year percentages) are calculated based on estimating a trend line through the annual data. The growth percentages are calculated based on this trend line, but presented in the table on an annual basis. The year-to-year percentages are shown in red where positive, and blue where negative.

Table A-2. FOUR-COUNTY REGION ESTIMATES BY INDUSTRY SECTOR, 3-DIGIT NAICS, RELATIVE SHARES OF EMPLOYED, AND ANNUALIZED CHANGE OF RELATIVE SHARES, 2004 THROUGH 2014

	NAICS (Sector) Business	Employment											Y-to-Y %
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
111	Crop Production	0.32%	0.33%	0.35%	0.34%	0.34%	0.29%	0.30%	0.41%	0.40%	0.39%	0.39%	2.3%
112	Animal Production and Aquaculture	0.43%	0.45%	0.42%	0.42%	0.40%	0.35%	0.35%	0.33%	0.36%	0.36%	0.37%	-2.6%
113	Forestry and Logging	0.32%	0.31%	0.32%	0.32%	0.31%	0.30%	0.29%	0.30%	0.28%	0.28%	0.29%	-1.3%
114	Fishing, Hunting and Trapping	0.14%	0.15%	0.14%	0.13%	0.12%	0.11%	0.13%	0.12%	0.12%	0.12%	0.12%	-2.3%
115	Support Activities for Agriculture and Forestry	0.10%	0.13%	0.13%	0.12%	0.13%	0.12%	0.12%	0.12%	0.12%	0.11%	0.10%	-1.2%
211	Oil and Gas Extraction	0.01%	0.03%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-18.9%
212	Mining (except Oil and Gas)	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%	0.01%	0.14%	0.14%	0.15%	14.0%
213	Support Activities for Mining	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	-5.0%
221	Utilities	0.67%	0.66%	0.64%	0.31%	0.31%	0.28%	0.28%	0.25%	0.25%	0.25%	0.30%	-12.4%
236	Construction of Buildings	1.37%	1.42%	1.50%	1.50%	1.51%	1.75%	1.79%	1.78%	1.78%	1.74%	1.63%	2.4%
237	Heavy and Civil Engineering Construction	0.62%	0.69%	0.74%	0.73%	0.76%	0.67%	0.67%	0.63%	0.59%	0.59%	0.64%	-1.4%
238	Specialty Trade Contractors	3.89%	3.93%	3.88%	3.87%	3.85%	3.64%	3.69%	3.71%	2.29%	2.23%	2.16%	-5.6%
311	Food Manufacturing	0.52%	0.66%	0.60%	0.60%	0.56%	0.52%	0.48%	0.43%	0.41%	0.40%	0.38%	-4.9%
312	Beverage and Tobacco Product Manufacturing	0.15%	0.15%	0.14%	0.14%	0.14%	0.08%	0.02%	0.01%	0.01%	0.01%	0.01%	-23.6%
313	Textile Mills	0.47%	0.46%	0.44%	0.60%	0.37%	0.30%	0.24%	0.03%	0.03%	0.02%	0.02%	-27.0%
314	Textile Product Mills	0.09%	0.09%	0.09%	0.08%	0.08%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	-3.2%
315	Apparel Manufacturing	0.13%	0.13%	0.11%	0.11%	0.11%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	-2.3%
316	Leather and Allied Product Manufacturing	0.80%	0.79%	0.75%	0.65%	0.59%	0.55%	0.57%	0.47%	0.60%	0.60%	0.66%	-3.2%
321	Wood Product Manufacturing	0.89%	0.93%	0.92%	0.82%	0.79%	0.73%	0.69%	0.56%	0.50%	0.47%	0.47%	-7.6%
322	Paper Manufacturing	1.20%	1.18%	1.14%	1.10%	1.09%	1.01%	0.99%	0.73%	0.39%	0.38%	0.35%	-11.8%
323	Printing and Related Support Activities	0.31%	0.31%	0.25%	0.23%	0.22%	0.20%	0.20%	0.20%	0.21%	0.20%	0.20%	-4.6%
324	Petroleum and Coal Products Manufacturing	0.03%	0.03%	0.02%	0.06%	0.06%	0.05%	0.06%	0.05%	0.05%	0.05%	0.02%	2.6%
325	Chemical Manufacturing	0.27%	0.26%	0.37%	0.37%	0.35%	0.32%	0.31%	0.31%	0.30%	0.29%	0.29%	-0.5%
326	Plastics and Rubber Products Manufacturing	0.10%	0.10%	0.10%	0.11%	0.13%	0.12%	0.11%	0.10%	0.09%	0.09%	0.09%	-1.3%
327	Nonmetallic Mineral Product Manufacturing	0.19%	0.21%	0.21%	0.20%	0.20%	0.20%	0.20%	0.18%	0.17%	0.15%	0.15%	-2.8%
331	Primary Metal Manufacturing	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	-6.9%
332	Fabricated Metal Product Manufacturing	0.75%	0.78%	0.79%	0.79%	0.78%	0.72%	0.71%	0.67%	0.63%	0.66%	0.68%	-2.1%
333	Machinery Manufacturing	0.72%	0.54%	0.57%	0.59%	0.59%	0.52%	0.53%	0.52%	0.52%	0.48%	0.49%	-2.8%
334	Computer and Electronic Product Manufacturing	0.73%	0.73%	0.57%	0.40%	0.27%	0.24%	0.22%	0.21%	0.12%	0.20%	0.08%	-30.9%
335	Electrical Equipment, Appliance, and Component Manufacturing	0.03%	0.03%	0.03%	0.04%	0.04%	0.04%	0.03%	0.03%	0.03%	0.03%	0.03%	-2.2%
336	Transportation Equipment Manufacturing	0.53%	0.53%	0.57%	0.57%	0.64%	0.58%	0.52%	0.51%	0.49%	0.47%	0.48%	-1.7%

	NAICS (Sector) Business	Employment											
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Y-to-Y %
337	Furniture and Related Product Manufacturing	0.13%	0.16%	0.15%	0.15%	0.15%	0.14%	0.14%	0.13%	0.12%	0.11%	0.12%	-2.6%
339	Miscellaneous Manufacturing	0.58%	0.49%	0.48%	0.46%	0.45%	0.43%	0.34%	0.29%	0.27%	0.37%	0.37%	-5.7%
423	Merchant Wholesalers, Durable Goods	1.78%	1.83%	1.77%	1.74%	1.73%	1.50%	1.49%	1.49%	1.44%	1.43%	1.42%	-2.9%
424	Merchant Wholesalers, Nondurable Goods	1.85%	1.87%	1.84%	1.87%	1.83%	1.55%	1.53%	1.64%	1.59%	1.59%	1.62%	-2.0%
441	Motor Vehicle and Parts Dealers	1.47%	1.53%	1.54%	1.54%	1.62%	1.53%	1.54%	1.49%	1.37%	1.38%	1.41%	-1.0%
442	Furniture and Home Furnishings Stores	0.29%	0.30%	0.28%	0.27%	0.26%	0.24%	0.25%	0.26%	0.25%	0.21%	0.21%	-3.1%
443	Electronics and Appliance Stores	0.39%	0.40%	0.39%	0.36%	0.38%	0.35%	0.41%	0.41%	0.38%	0.36%	0.36%	-0.3%
444	Building Material and Garden Equipment and Supplies Dealers	1.12%	1.40%	1.35%	1.42%	1.38%	1.35%	1.50%	1.40%	1.30%	1.28%	1.29%	0.2%
445	Food and Beverage Stores	2.86%	2.91%	2.76%	2.64%	2.66%	2.49%	2.48%	2.22%	2.49%	2.46%	2.52%	-1.9%
446	Health and Personal Care Stores	0.64%	0.64%	0.61%	0.66%	0.66%	0.61%	0.62%	0.64%	0.77%	0.94%	0.95%	4.2%
447	Gasoline Stations	0.40%	0.41%	0.35%	0.33%	0.32%	0.29%	0.31%	0.24%	0.21%	0.21%	0.17%	-8.2%
448	Clothing and Clothing Accessories Stores	0.45%	0.46%	0.43%	0.42%	0.43%	0.40%	0.42%	0.47%	0.48%	0.48%	0.45%	0.7%
451	Sporting Goods, Hobby, Musical Instrument, and Book Stores	0.51%	0.53%	0.54%	0.52%	0.51%	0.47%	0.49%	0.52%	0.50%	0.51%	0.51%	-0.4%
452	General Merchandise Stores	1.30%	1.30%	1.27%	1.79%	1.78%	1.66%	2.00%	1.94%	1.37%	1.45%	1.51%	1.4%
453	Miscellaneous Store Retailers	1.02%	1.06%	1.04%	1.01%	1.00%	0.94%	0.91%	0.95%	0.89%	0.86%	0.81%	-2.4%
454	Nonstore Retailers	0.56%	0.57%	0.65%	0.66%	0.66%	0.64%	0.60%	0.60%	0.57%	0.56%	0.58%	-0.6%
481	Air Transportation	0.00%	0.01%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.01%	0.01%	0.01%	5.4%
482	Rail Transportation	0.14%	0.14%	0.13%	0.13%	0.13%	0.12%	0.12%	0.12%	0.14%	0.14%	0.11%	-1.0%
483	Water Transportation	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	1.3%
484	Truck Transportation	0.78%	0.77%	0.74%	0.66%	0.65%	0.62%	0.66%	0.68%	0.56%	0.59%	0.57%	-3.1%
485	Transit and Ground Passenger Transportation	0.34%	0.33%	0.38%	0.37%	0.38%	0.30%	0.31%	0.31%	0.30%	0.30%	0.32%	-1.8%
487	Scenic and Sightseeing Transportation	0.03%	0.03%	0.03%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	-5.8%
488	Support Activities for Transportation	0.46%	0.47%	0.47%	0.41%	0.43%	0.41%	0.37%	0.45%	0.41%	0.42%	0.39%	-1.5%
491	Postal Service	0.49%	0.48%	0.52%	0.51%	0.50%	0.46%	0.48%	0.46%	0.48%	0.48%	0.52%	-0.2%
492	Couriers and Messengers	0.12%	0.12%	0.12%	0.12%	0.12%	0.10%	0.09%	0.09%	0.07%	0.07%	0.07%	-5.9%
493	Warehousing and Storage	0.33%	0.33%	0.26%	0.25%	0.24%	0.23%	0.23%	0.22%	0.20%	0.20%	0.21%	-5.1%
511	Publishing Industries (except Internet)	0.67%	0.65%	0.64%	0.59%	0.57%	0.54%	0.56%	0.54%	0.52%	0.52%	0.41%	-3.7%
512	Motion Picture and Sound Recording Industries	0.18%	0.18%	0.18%	0.18%	0.18%	0.19%	0.13%	0.15%	0.15%	0.15%	0.15%	-2.6%
515	Broadcasting (except Internet)	0.26%	0.21%	0.21%	0.04%	0.03%	0.04%	0.04%	0.04%	0.04%	0.04%	0.02%	-20.6%
517	Telecommunications	0.35%	0.34%	0.31%	0.31%	0.29%	0.28%	0.26%	0.25%	0.50%	0.46%	0.48%	4.2%
518	Data Processing, Hosting, and Related Services	0.06%	0.06%	0.06%	0.06%	0.05%	0.06%	0.07%	0.07%	0.07%	0.05%	0.05%	-0.6%
519	Other Information Services	0.38%	0.35%	0.36%	0.36%	0.32%	0.30%	0.30%	0.28%	0.28%	0.28%	0.29%	-3.2%
522	Credit Intermediation and Related Activities	1.79%	2.04%	1.79%	1.79%	1.71%	1.61%	1.14%	1.08%	1.09%	2.78%	2.93%	2.3%
523	Securities, Commodity Contracts, and Other Financial Investments	0.09%	0.11%	0.12%	0.13%	0.14%	0.13%	0.13%	0.16%	0.16%	0.16%	0.15%	5.1%

	NAICS	Employment											
	(Sector) Business and Related Activities	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Y-to-Y %
524	Insurance Carriers and Related Activities	0.50%	0.56%	0.55%	0.55%	0.55%	0.51%	0.49%	0.45%	0.44%	0.43%	0.39%	-3.1%
525	Funds, Trusts, and Other Financial Vehicles	0.12%	0.11%	0.18%	0.18%	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%	0.09%	-6.0%
531	Real Estate	1.12%	1.18%	1.20%	1.55%	1.54%	1.44%	1.39%	1.44%	1.40%	1.30%	1.25%	0.9%
532	Rental and Leasing Services	0.47%	0.49%	0.48%	0.49%	0.47%	0.52%	0.48%	0.51%	0.49%	0.47%	0.41%	-0.5%
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	4.8%
541	Professional, Scientific, and Technical Services	3.01%	3.19%	3.25%	3.15%	3.28%	3.04%	2.81%	3.04%	2.92%	2.93%	2.69%	-1.3%
551	Management of Companies and Enterprises	0.40%	0.40%	0.39%	0.39%	0.38%	0.35%	0.37%	0.36%	0.34%	0.17%	0.18%	-5.9%
561	Administrative and Support Services	2.83%	3.51%	5.36%	5.69%	5.83%	6.00%	6.18%	7.31%	6.51%	5.45%	5.31%	4.7%
562	Waste Management and Remediation Services	0.28%	0.29%	0.26%	0.25%	0.25%	0.25%	0.24%	0.24%	0.22%	0.23%	0.23%	-2.0%
611	Educational Services	8.00%	7.99%	8.29%	8.04%	8.30%	7.97%	8.52%	8.35%	8.94%	8.79%	9.33%	1.4%
621	Ambulatory Health Care Services	4.50%	4.66%	4.35%	4.54%	4.74%	4.44%	4.02%	5.11%	6.81%	6.84%	6.93%	5.3%
622	Hospitals	3.05%	3.10%	3.01%	2.97%	2.98%	4.58%	4.82%	4.66%	6.32%	6.52%	6.24%	10.6%
623	Nursing and Residential Care Facilities	2.96%	2.45%	2.34%	2.31%	2.29%	2.09%	2.05%	2.02%	2.13%	2.08%	2.13%	-2.8%
624	Social Assistance	2.89%	2.94%	2.93%	2.90%	2.87%	2.66%	2.46%	2.63%	2.50%	1.73%	1.71%	-4.6%
711	Performing Arts, Spectator Sports, and Related Industries	0.22%	0.23%	0.24%	0.22%	0.24%	0.23%	0.20%	0.21%	0.21%	0.21%	0.17%	-1.9%
712	Museums, Historical Sites, and Similar Institutions	0.22%	0.23%	0.23%	0.22%	0.23%	0.22%	0.23%	0.24%	0.24%	0.23%	0.24%	0.7%
713	Amusement, Gambling, and Recreation Industries	1.03%	1.10%	1.06%	1.05%	1.05%	1.01%	0.96%	0.96%	0.91%	0.92%	0.86%	-2.1%
721	Accommodation	1.71%	1.73%	1.73%	1.77%	1.84%	1.75%	1.64%	1.60%	1.56%	1.52%	1.46%	-1.7%
722	Food Services and Drinking Places	4.25%	4.36%	3.99%	4.00%	3.99%	3.61%	3.59%	3.68%	3.56%	3.71%	3.78%	-1.7%
811	Repair and Maintenance	1.11%	1.13%	1.22%	1.20%	1.22%	1.17%	1.15%	1.22%	1.15%	1.18%	1.16%	0.2%
812	Personal and Laundry Services	0.86%	0.90%	0.91%	0.91%	0.90%	0.90%	0.87%	0.89%	0.84%	0.85%	0.85%	-0.6%
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	4.65%	3.07%	2.84%	2.74%	2.62%	2.45%	2.51%	2.66%	2.69%	2.62%	2.47%	-4.3%
921	Executive, Legislative, and Other General Government Support	2.95%	3.02%	3.21%	3.19%	3.05%	7.19%	7.35%	7.06%	6.78%	6.84%	7.18%	12.0%
922	Justice, Public Order, and Safety Activities	2.12%	2.42%	2.43%	2.74%	3.08%	2.89%	2.94%	2.87%	2.80%	2.76%	2.93%	2.2%
923	Administration of Human Resource Programs	6.69%	6.34%	5.78%	5.64%	5.15%	4.22%	4.09%	3.06%	2.96%	3.13%	3.25%	-9.1%
924	Administration of Environmental Quality Programs	1.96%	1.67%	1.82%	1.89%	1.88%	1.94%	2.04%	2.00%	1.90%	1.90%	1.48%	-0.4%
925	Administration of Housing Programs, Urban Planning, and Community Development	0.08%	0.09%	0.11%	0.11%	0.10%	0.10%	0.04%	0.04%	0.04%	0.04%	0.04%	-10.3%
926	Administration of Economic Programs	4.06%	3.89%	3.70%	3.73%	4.07%	3.83%	4.07%	3.91%	4.25%	4.24%	4.14%	0.9%
928	National Security and International Affairs	0.25%	0.29%	0.28%	0.31%	0.35%	0.34%	0.36%	0.37%	0.30%	0.36%	0.38%	3.2%
999	N/A	0.09%	0.12%	0.23%	0.26%	0.25%	0.29%	0.38%	0.53%	0.62%	0.71%	0.96%	49.1%

APPENDIX B: PRESENTATION TO KVCC (ISSUED JUNE 26, 2018)

PURPOSE OF THE STUDY

- To estimate the economic impact of KVCC on the local and state economy.
- To explore the rate of return on investment for the individual and the state.

METHODOLOGY

- The economic impact of KVCC-related spending was estimated using multipliers* generated via a regional (KVCC market area) economic input-output model (IMPLAN) based on 2016 data.
- Advantages to using IMPLAN:
 - Calibrated to local conditions using a relatively large amount of local county level and state of Maine specific data
 - Based on a strong theoretical foundation, and
 - Uses a well-researched and accepted applied economics impact assessment methodology supported by many years of use across all regions of the U.S.

*Multiplier — The term used for the economic ripple effect measured by an economic impact model. These multipliers provide estimates of the number of times each dollar of input (i.e., direct spending) cycles through the economy in terms of indirect and induced output (e.g., additional spending, personal income, and employment).

ECONOMIC DATA ELEMENTS

The KVCC-specific input data used for the economic modeling process included:

- Economic Impact Analysis
 - Payroll operations
 - Current expenses
 - Capital outlay
 - Student spending
- LIFETIME EARNINGS ANALYSIS (based on Fall 2016 KVCC degree-seeking students of 1,613)
 - US Census Bureau, Current Population Survey (CPS) Data based on Adult Civilian Workers Personal Income by Age and Educational Attainment.

ECONOMIC IMPACT RESULTS

KVCC KEY ECONOMIC IMPACT

Summary of KVCC Economic Impact by Activity

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC Operations & Payroll	\$ 31,674,050	\$ 22,814,590	372	\$ 16,147,581
Student Spending (instate & out-of-state)	\$ 15,443,049	\$ 10,691,614	96	\$ 1,445,396
Total	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977

Notes: Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures, and IMPLAN software and state of Maine/county (2016) data. Employment includes full-time and part-time jobs.

KVCC is an important contributor to Maine's economy both directly and indirectly through spending for payroll, operations, capital improvements and student living expenses.

ECONOMIC IMPACT RESULTS

- The total estimated annual economic impact from KVCC operations was **\$47 million** in fiscal year 2017.
 - **\$32 million** based on KVCC operations, payroll and expenses
 - **\$15 million** based on student spending (e.g., housing, books, food & utilities, travel, etc.)
- The employment impact is estimated to be **468 full- and part-time jobs**.
- The labor income impact is estimated at **\$17.6 million**.
- KVCC employees generate about **\$2.9 million** in state & local taxes, and **\$4.7 million** in federal taxes annually.

BENEFIT/COST (B/C) RATIO RELATING OF THE STATE INVESTMENT OR OPPORTUNITY COST

- For every state dollar of industry output resulting from the \$6.8 million state investment in KVCC, **\$4.18** is generated in economic activity by KVCC for the state of Maine.

KVCC's Benefit Cost Ratio Relating to the State Investment or Opportunity Cost

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC State Investment (Cost)	\$ 11,266,681	\$ 6,792,289	108	\$ 5,132,048
KVCC Economic Impacts (Benefit)	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977
Benefit/Cost Ratio	4.18	4.93	4.33	3.43

Notes: Values in 2017 dollars. Value Added refers to GDP.

Sources: KVCC financial data for revenues and expenditures, and IMPLAN software and state of Maine/county (2016) data. Employment includes full-time and part-time jobs.

NOTE: When compared with recent economic impact studies from other community colleges and state universities, KVCC is in the range of standard benefit/cost ratios using IMPLAN (e.g., Grand Rapids Community College in MI: 4.2 to Montgomery County Community College in PA: 6.0).

Other benefit/cost studies not using IMPLAN (and without transparent or easily replicable methodologies) were found to have benefit/cost ratios ranging from: 2.5 (University of Texas - Austin) to 12.8 (Ozarka College, AR).

Additionally, KVCC contributes a long-range impact on Maine's economy through increased earnings (over 30 years) and spending by graduates.

- For the KVCC Fall 2016 degree-seeking cohort (1,613 enrolled) the estimated value of the 30-year lifetime earnings differential (between KVCC graduates and those who have attained only a high school diploma) results in an output of **\$1.06 billion, \$603 million** in (GDP) value added impact, and **8,660 jobs** over 30 years.
- The estimated value added average is **\$20.1 million** annually.
- **Approximately 90%** of KVCC graduates remain in the State of Maine, contributing an added value (GDP) to Maine's economy by virtue of their lifetime earnings.

Expected Lifetime Earnings of KVCC Graduates (over 30 Years)

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
Lifetime Earnings (30 years)	\$ 1,055,012,668	\$ 602,868,058	8,660	\$ 315,355,374

Notes: Values in 2017 dollars. Value Added refers to GDP.

- Based on this one year snapshot, the estimated value of the 30-year lifetime earnings differential for the 2016 KVCC cohort compared to their counterparts who only earned a high school degree COMBINED with the State FY2017 annual economic impact of KVCC is **\$1.1 billion** in output, **\$636 value added (GDP)** and **9,128 employment (full- and part-time jobs)**.

Total Economic Impact Including Expected Lifetime Earnings of KVCC Graduates (over 30 Years)

Economic Activity	Industry Output	Value Added	Employment (Jobs)	Income
KVCC Operations, Payroll, and Student Spending Subtotal	\$ 47,117,099	\$ 33,506,204	468	\$ 17,592,977
Lifetime Earnings (30 years)	\$ 1,055,012,668	\$ 602,868,058	8,660	\$ 315,355,374
Grand Total	\$ 1,102,129,767	\$ 636,374,262	9,128	\$ 332,948,351

Notes: Values in 2017 dollars. Value Added refers to GDP.

SERVICE AREA BACKGROUND AND DEMOGRAPHICS

HIGHLIGHTS OF THE KVCC MARKET AREA

- The KVCC market area population is **over a quarter million** (representing about 19% of the Maine population), with a **GDP of \$9.8 billion**.
- From 2015 to 2016, the KVCC market area experienced a 1.6% rise in employment, a **4% growth** in GDP, and a corresponding **growth in income** of about **10%**. This represents a much higher rate of growth than the state of Maine.
- From 2004 to 2014, Maine's job growth in ambulatory health care services and hospitals has **increased 5.3% to 10.6%** respectively; this corresponds with KVCC's output of graduates in nursing and other health professions.

SHIFTING DEMOGRAPHICS

- Between 2010 and 2016, the region experienced a **4% decline** in the **prime working age group** (age 25 to 64)
- Regional demographics changes:
 - Growth in population ages 65+
 - Aging workforce... **18% increase** in workers ages 55+ from 2013 to 2016
- The KVCC market area is projected to experience a **population decrease** of 5,111 across years 2020-2030

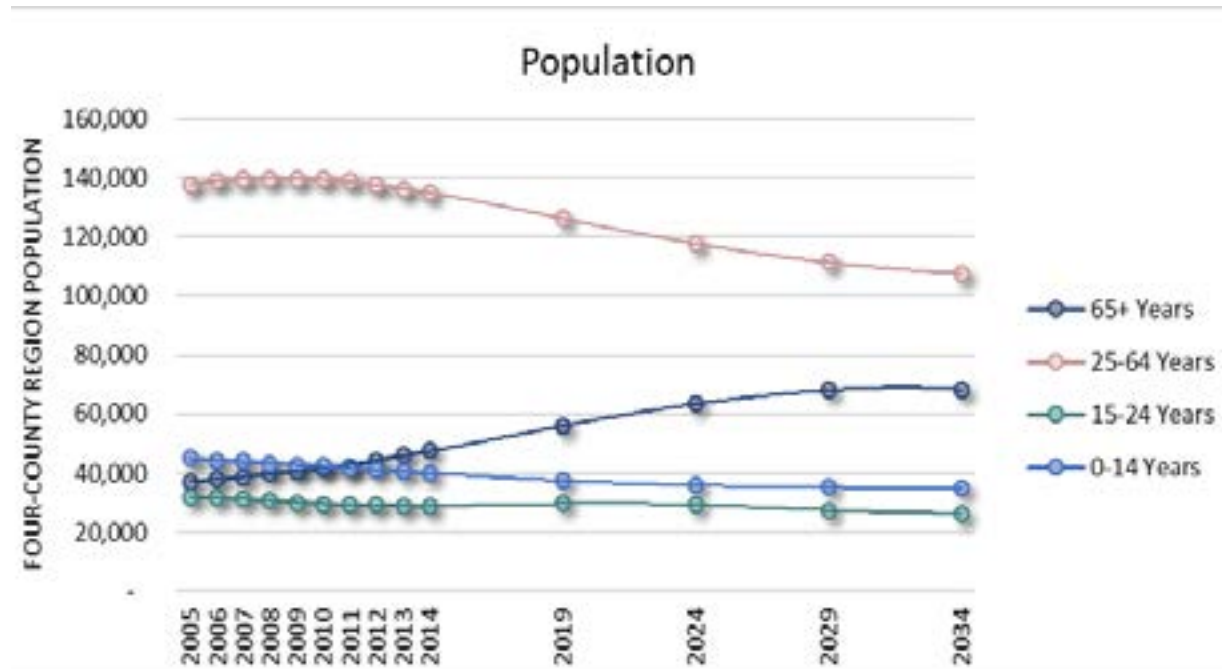
AGE COHORTS

State and County Populations by Age 2010 and 2016

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Persons under 5 years, percent, July 1, 2016	5.1%	4.7%	4.7%	4.6%	12,221	4.9%
Persons under 5 years, percent, April 1, 2010	5.2%	4.8%	5.2%	5.3%	13,031	5.2%
Persons under 18 years, percent, July 1, 2016	19.7%	18.1%	19.4%	19.0%	48,302	19.1%
Persons under 18 years, count, July 1, 2016	23,752	7,194	9,878	7,479	48,302	254,312
Persons under 18 years, percent, April 1, 2010	20.7%	19.4%	21.4%	21.0%	52,316	20.7%
Persons 65 years and over, percent, July 1, 2016	18.0%	23.5%	20.2%	20.9%	49,554	19.4%
Persons 65 years and over, percent, April 1, 2010	15.5%	19.1%	16.3%	16.2%	41,319	15.9%
Persons over 18 years and under 65 years, July 1, 2016	23,210	23,658	30,753	75,114	152,735	818,860
Persons over 18 years and under 65 years, April 1, 2010	24,438	24,358	32,538	77,932	159,266	842,183

POPULATION CHANGE

Regional Population Projections by Age Cohort Years 2005-2034



MARKET VS. STATE COMPARISONS

State and County Households and Persons per Household 2011-2015

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Households, 2011-2015	51,443	16,999	21,800	16,888	107,130	553,284
Persons per household, 2011-2015	2.28	2.27	2.34	2.26	2.29	2.34

State and County Educational Attainment 2010-2015

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total ²	Maine
High school graduate or higher, percent of persons age 25 years+, 2011-2015	91.5%	93.0%	87.9%	92.2%	91.1%	91.6%
					184,329	
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	25.0%	31.2%	15.4%	30.3%	24.9%	29.0%
					50,341	

State and County Civilian Labor Force 2010-2015

	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total ³	Maine
In civilian labor force, total, percent of population age 16 years+, 2011-2015	62.8%	61.7%	58.1%	61.8%	61.5%	63.4%
					124,432	

INCOME DATA

State and County Median Household Incomes and Per Capita Income (in 2015 dollars), 2011-2015

	Kennebec County	Knox County	Somerset County	Waldo County	Sub Total ⁴	Maine
Median household income (in 2015 dollars), 2011-2015	\$ 46,917	\$ 50,693	\$ 40,066	\$ 44,082	\$ 45,675	\$ 49,331
Per capita income in past 12 months (in 2015 dollars), 2011-2015	\$ 25,957	\$ 28,144	\$ 21,729	\$ 24,473	\$ 25,212	\$ 27,655

Estimated Total Households Income and Benefits Per Income Bracket, Four-County Region, 2015 Inflation Adjusted Dollars

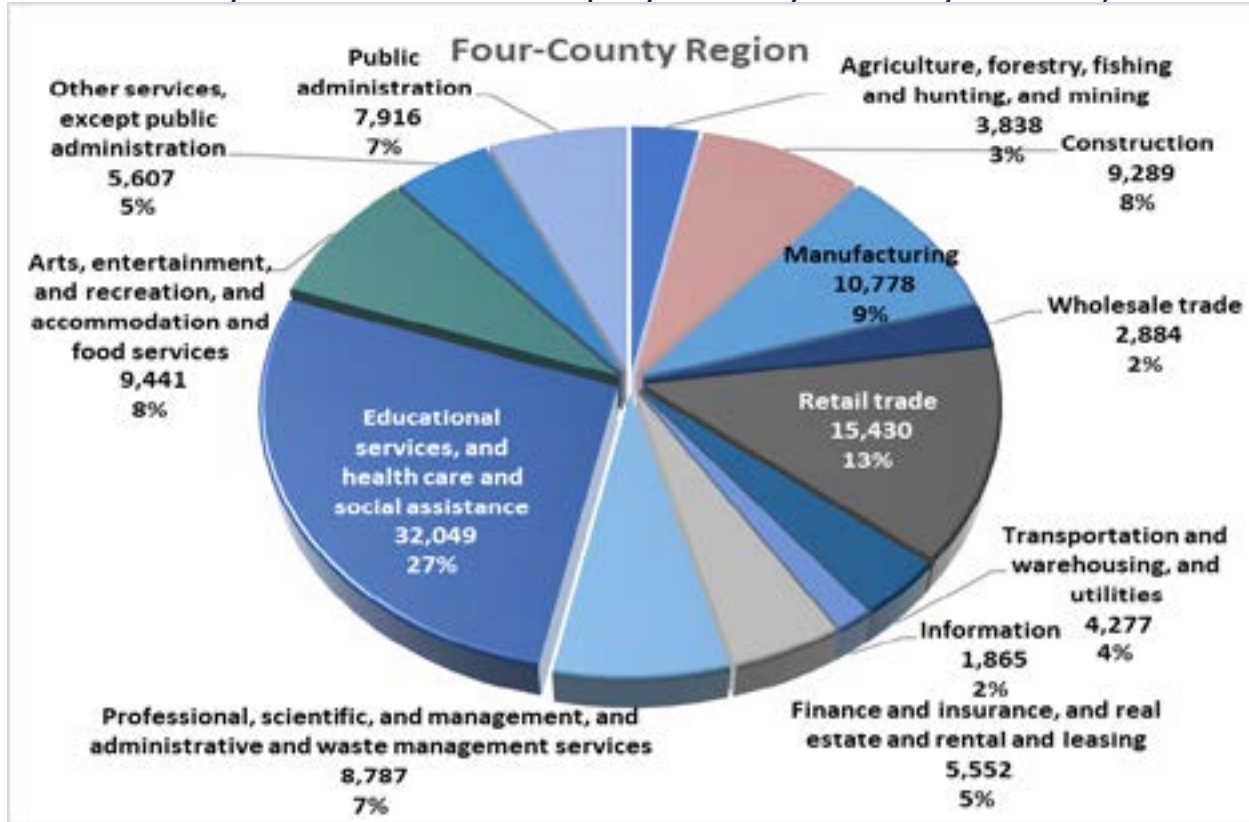


OCCUPATIONAL DATA

- Top occupations in SE Maine not requiring a bachelor's degree:
 - Supervisors of office and administrative support
 - Supervisors of production and operating workers
 - Licensed practical/vocational nurses
 - Executive secretaries/administrative assistants
 - Police and sheriff's patrol officers
- Top occupations in SE Maine requiring a bachelor's degree:
 - Registered nurses
 - General and operations managers
- Based on a recent Boston Federal Reserve study, the fastest growing demand occupation sector for current and future workers is the medical industry.

AREA EMPLOYMENT

Four-County Area Estimated Employment by Industry Sector*, 2015



*Source: US Census Data, 2015

INDUSTRY SECTOR EMPLOYMENT

Four-County Region Estimates on Industry - Civilian Employed Population
16 Years and Over, 2010-2015*,**

INDUSTRIES	Four-County Region					
	2010	2011	2012	2013	2014	2015
Agriculture, forestry, fishing and hunting, and mining	3,648	3,569	3,635	3,492	3,699	3,838
Construction	10,085	10,127	10,380	10,027	9,413	9,289
Manufacturing	11,521	11,342	10,614	11,004	10,941	10,778
Wholesale trade	3,324	3,114	3,113	3,042	2,963	2,884
Retail trade	16,651	16,673	16,050	15,745	15,575	15,430
Transportation and warehousing, and utilities	5,271	5,096	5,109	4,354	4,274	4,277
Information	2,302	2,193	2,149	1,984	1,969	1,865
Finance and insurance, and real estate and rental and leasing	5,064	5,080	5,732	5,732	5,673	5,552
Professional, scientific, and management, and administrative and waste management services	9,030	9,144	9,325	8,988	8,965	8,787
Educational services, and health care and social assistance	31,110	31,095	30,864	30,876	31,177	32,049
Arts, entertainment, and recreation, and accommodation and food services	8,702	8,964	9,046	9,273	9,273	9,441
Other services, except public administration	6,154	6,043	5,842	5,761	5,567	5,607
Public administration	7,144	7,452	7,352	7,631	7,767	7,916
INDUSTRY TOTAL	121,606	120,692	119,211	117,909	117,256	117,713

*U.S. Census Data 2010-2015. Shaded areas in pink indicate the largest NAICS employment category, while blue cells indicate the smallest category. ** Please see following slides for a more detailed breakout of Healthcare Services (i.e., the Medical Industry) using a different data source, the National Establishment Time Series (NETS) Database (2014).

INDUSTRY SECTOR EMPLOYMENT

KVCC Four-County Region Estimates by Industry Sector, Three-digit NAICS, Employed and Sales, Including Relative Shares, 2014*

NAICS	Count	Employment	Sales (\$ Millions)	Count %	Employment %	Sales %
(Sector) Business				%	%	%
(1) Agriculture, Forestry, Fishing and Hunting	652	2,006	\$ 152.1	3.4%	1.3%	1.2%
(2) Mining, Quarrying, and Oil and Gas Extraction	10	247	\$ 61.6	0.1%	0.2%	0.5%
(22) Utilities	47	475	\$ 176.5	0.2%	0.3%	1.4%
(23) Construction	1,784	7,067	\$ 775.4	9.4%	4.4%	6.0%
(31-1) Manufacturing	690	8,054	\$ 1,025.4	3.6%	5.1%	8.0%
(42) Wholesale Trade	629	4,849	\$ 1,052.2	3.3%	3.0%	8.2%
(44-45) Retail Trade	2,108	17,177	\$ 2,718.7	11.1%	10.8%	21.1%
(48-49) Transportation and Warehousing	594	3,543	\$ 212.5	3.1%	2.2%	1.6%
(51) Information	276	2,229	\$ 166.0	1.4%	1.4%	1.3%
(52) Finance and Insurance	406	5,664	\$ 970.9	2.1%	3.6%	7.5%
(53) Real Estate and Rental and Leasing	680	2,664	\$ 232.4	3.6%	1.7%	1.8%
(54) Professional, Scientific, and Technical Services	1,535	4,280	\$ 323.7	8.0%	2.7%	2.5%
(55) Management of Companies and Enterprises	14	290	\$ 32.5	0.1%	0.2%	0.3%
(56) Administrative and Support and Waste Management and Remediation Services	3,660	8,831	\$ 547.7	19.2%	5.5%	4.3%
(61) Educational Services	491	14,871	\$ 1,114.2	2.6%	9.3%	8.6%
(611) Educational Services	491	14,871	\$ 1,114.2	2.6%	9.3%	8.6%
(62) Health Care and Social Assistance	1,502	27,103	\$ 2,374.8	7.9%	17.0%	18.4%
(621) Ambulatory Health Care Services	902	11,044	\$ 986.3	4.7%	6.9%	7.7%
(622) Hospitals	49	9,938	\$ 1,114.4	0.3%	6.2%	8.6%
(623) Nursing and Residential Care Facilities	100	3,397	\$ 164.7	0.5%	2.1%	1.3%
(624) Social Assistance	451	2,724	\$ 109.4	2.4%	1.7%	0.8%
(71) Arts, Entertainment, and Recreation	435	2,023	\$ 113.0	2.3%	1.3%	0.9%
(72) Accommodation and Food Services	757	8,346	\$ 305.2	4.0%	5.2%	2.4%
(81) Other Services (except Public Administration)	1,979	7,136	\$ 514.0	10.4%	4.5%	4.0%
(92-99) Government	825	32,451	\$ 16.1	4.3%	20.4%	0.1%
	19,074	159,306	\$ 12,884.1	100%	100%	100%

*Shaded text in red indicates the detailed breakout of Healthcare Services (i.e., the Medical Industry); NAICS codes: 621, 622, & 623. Medical Industry breakouts were provided using the National Establishment Time Series (NETS) Database (2014 data) by Mauricio Kaili, Federal Reserve Bank of Boston.

EMPLOYMENT TRENDS

KVCC Four-County Region Estimates by Industry Sector, Three-digit NAICS, Relative Shares of Employed, and Annualized Change of Relative Shares, from 2004 to 2014 **, **

NAICS (3-digit) Business	Employment											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Y-to-Y %
(11) Agriculture, Forestry, Fishing and Hunting	1.2%	1.2%	1.2%	1.2%	1.2%	1.1%	1.1%	1.2%	1.2%	1.2%	1.2%	-0.1%
(21) Mining, Quarrying, and Oil and Gas Extraction	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	32.0%
(22) Utilities	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	12.4%
(23) Construction	1.8%	1.6%	1.1%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	0.9%	-2.0%
(31-33) Manufacturing	8.6%	8.3%	8.1%	8.0%	7.8%	8.0%	8.0%	8.0%	8.1%	8.1%	8.0%	-6.3%
(42) Wholesale Trade	3.4%	3.2%	3.0%	3.0%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	-2.4%
(44-45) Retail Trade	11.0%	11.0%	11.2%	11.6%	11.6%	11.9%	11.9%	11.1%	10.9%	10.7%	10.7%	-6.4%
(48-49) Transportation and Warehousing	2.0%	2.0%	2.0%	2.1%	2.0%	2.0%	2.0%	2.2%	2.2%	2.2%	2.2%	2.2%
(51) Information	1.8%	1.7%	1.7%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	-2.0%
(52) Finance and Insurance	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	1.0%
(53) Real Estate and Rental and Leasing	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	0.0%
(54) Professional, Scientific, and Technical Services	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	-1.2%
(55) Management of Companies and Enterprises	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	-5.9%
(56) Administrative and Support and Waste Management and Remediation Services	3.4%	3.2%	3.2%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	5.8%
(61) Educational Services	0.0%	7.9%	8.2%	8.4%	8.2%	7.9%	8.0%	8.3%	8.4%	8.7%	8.2%	1.4%
(62) Health Care and Social Assistance	13.0%	13.1%	12.8%	12.7%	12.8%	13.7%	13.7%	13.3%	14.0%	17.1%	17.0%	3.3%
(621) Ambulatory Health Care Services	4.5%	4.8%	4.8%	4.9%	4.7%	4.6%	4.6%	5.1%	6.0%	8.3%	8.8%	5.3%
(622) Hospitals	3.0%	3.1%	3.1%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	10.6%
(623) Nursing and Residential Care Facilities	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	-2.8%
(624) Social Assistance	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	-5.6%
(71) Arts, Entertainment, and Recreation	1.4%	1.3%	1.3%	1.4%	1.3%	1.4%	1.3%	1.4%	1.3%	1.3%	1.3%	-1.6%
(72) Accommodation and Food Services	5.9%	6.0%	6.2%	6.7%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	-1.7%
(81) Other Services (except Public Administration)	5.0%	5.1%	4.9%	4.8%	4.7%	4.8%	4.8%	4.7%	4.6%	4.6%	4.6%	-2.5%
62-99 Unassigned	18.0%	17.6%	17.6%	17.8%	17.8%	18.7%	18.7%	18.8%	19.0%	19.0%	19.0%	1.6%

*Shaded text in red indicates the detailed breakout of Healthcare Services (i.e., the Medical Industry); NAICS codes: 621, 622, & 623. Medical Industry breakouts were provided using the National Establishment Time Series (NETS) Database (2014 data) by Mauricio Kaili, Federal Reserve Bank of Boston. **Y-to-Y percentages are shown in red where positive, and blue where negative.

EMPLOYMENT BY COUNTY

Estimated Occupation - Civilian Employed Population 16 Years and Over for the Four-County Region*

OCCUPATION	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Management, Business, Science, and Arts Occupations	20,656	6,508	5,992	6,215	39,371	229,781
Service Occupations	10,181	3,424	4,071	3,672	21,348	120,088
Sales and Office Occupations	14,913	4,554	5,236	4,038	28,741	155,292
Natural Resources, Construction, and Maintenance Occupations	5,951	2,922	3,274	2,223	14,370	69,640
Production, Transportation, and Material Moving Occupations	6,086	1,862	3,702	2,233	13,883	73,886
Total Civilian Employed Population 16 years and over	57,787	19,270	22,275	18,381	117,713	648,687

*Shaded areas in pink indicate the largest occupational category, while blue cells indicate the smallest occupational category.

HEALTH SECTOR EMPLOYMENT

Estimated Educational Services, Healthcare and Social Assistance Employment - Civilian Employed Population 16 Years and Over for the Four-County Region, 2014 *

	Educational, Healthcare & Social Assistance Services	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	MAINE
	(Sector) Business						
611	Educational Services	8,079	2,437	2,573	1,782	14,871	73,689
621	Ambulatory Health Care Services	8,413	1,186	937	508	11,044	42,646
622	Hospitals	7,477	778	970	713	9,938	34,559
623	Nursing and Residential Care Facilities	1,828	686	402	481	3,397	20,019
624	Social Assistance	1,620	305	306	493	2,724	13,709
		27,417	5,392	5,188	3,977	41,974	184,622

*Includes a detailed breakout of Healthcare Services (i.e., the Medical Industry); NAICS codes: 621, 622, & 623. Medical Industry breakouts were provided using the National Establishment Time Series (NETS) Database (2014 data) by Mauricio Kaili, Federal Reserve Bank of Boston.

BUSINESS DATA BY COUNTY

State and County Businesses, Employees, and Payroll 2015

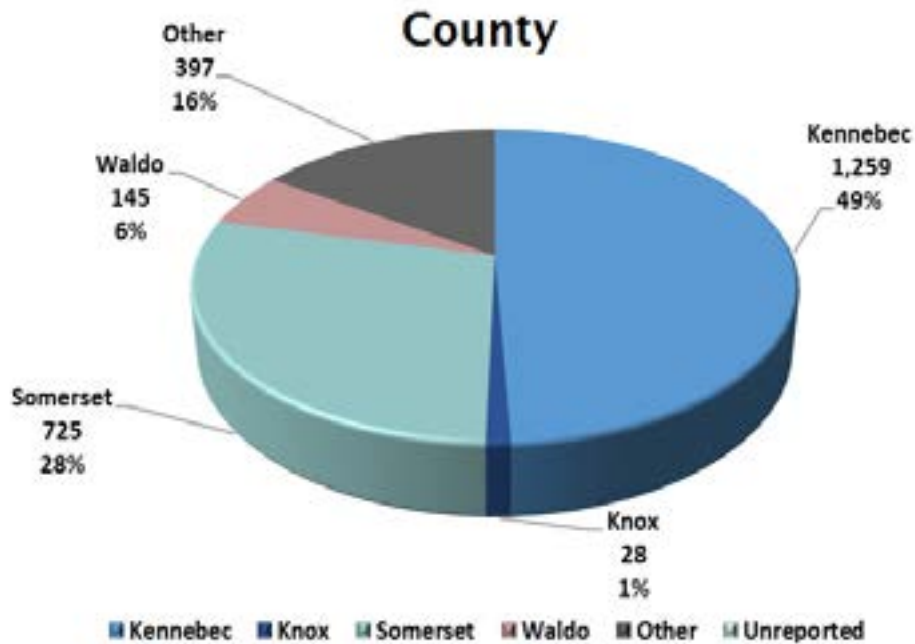
	Kennebec County	Knox County	Somerset County	Waldo County	Sub-Total	Maine
Total employer establishments, 2015	3,203	1,734	1,164	981	7,082	40,801
Total employment, 2015	45,976	14,160	13,549	8,662	82,347	500,549
Total annual payroll, 2015 (\$1,000)	\$ 1,729,544	\$ 522,548	\$ 519,479	\$ 311,054	\$ 3,082,625	\$ 20,413,159
Total employment, percent change 2014-2015	0.9%	0.0%	-2.3%	0.2%	0.1%	1.6%
Total non-employer establishments, 2015	8,395	5,919	3,188	3,853	21,355	113,012

KVCC STUDENT TRENDS

- KVCC Fall 2016 headcount was 2,551, of which 1,613 students were degree-seeking.
- Nearly half (49%) of all KVCC students are from Kennebec County. Three-quarters of all students are from Kennebec or Somerset County.
- Sixteen percent of students come from outside the KVCC service area.

STUDENT RESIDENCY BY COUNTY

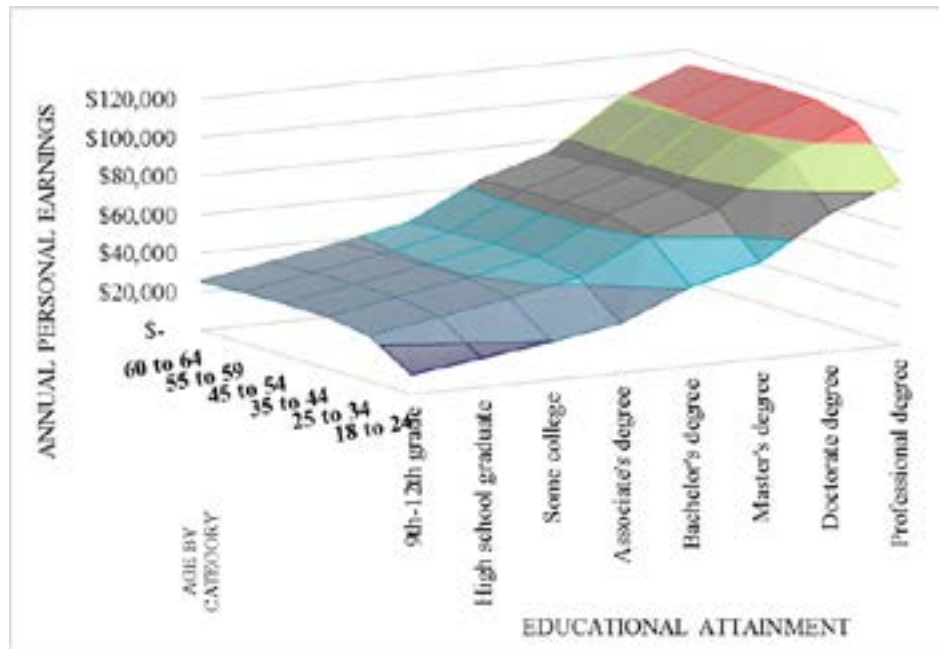
KVCC Student Residency by County



SUPPORTING DATA

ECONOMIC DATA

Estimated Regression Plane on Maine’s Personal Earnings By Age Cohort and Educational Attainment



ANNUAL EARNINGS BY AGE/EDUCATION

Maine Estimated Annual Earnings by Age Cohort and Educational Attainment

Age (years)	High School Graduate	Some College	Associate's Degree	Bachelor's Degree	Master's Degree	Doctorate Degree	Professional Degree
18 to 24	\$ 14,936	\$ 19,839	\$ 25,834	\$ 41,049	\$ 50,263	\$ 71,902	\$ 84,328
25 to 34	\$ 29,684	\$ 35,755	\$ 42,959	\$ 60,618	\$ 71,043	\$ 95,059	\$ 108,648
35 to 44	\$ 33,218	\$ 39,509	\$ 46,945	\$ 65,080	\$ 75,744	\$ 100,234	\$ 114,058
45 to 54	\$ 33,372	\$ 39,672	\$ 47,118	\$ 65,273	\$ 75,947	\$ 100,458	\$ 114,291
55 to 59	\$ 32,645	\$ 38,902	\$ 46,301	\$ 64,362	\$ 74,988	\$ 99,403	\$ 113,189
60 to 64	\$ 31,740	\$ 37,941	\$ 45,282	\$ 63,222	\$ 73,787	\$ 98,082	\$ 111,809

LIFETIME EARNINGS DIFFERENTIALS

Maine Estimated Annual Earnings Differentiated by Educational Attainment

	High School Graduate	Some College	Associate's Degree	Bachelor's Degree	Master's Degree	Doctorate Degree	Professional Degree
to 65 (= 34yrs)	\$ 1,109,723	\$ 1,322,408	\$ 1,573,960	\$ 2,187,956	\$ 2,549,217	\$ 3,379,272	\$ 3,847,984
Differential compared to high school graduates		\$ 212,685	\$ 464,236	\$ 1,078,232	\$ 1,439,494	\$ 2,269,549	\$ 2,738,260

Average Individual Lifetime Earnings for Maine Residents by Educational Attainment Level

Degree	Estimated Lifetime Earnings Over time		
	10 Years	20 Years	30 Years
High School Graduate	\$ 321,121	\$ 655,453	\$ 983,123
Some College	\$ 383,353	\$ 780,722	\$ 1,171,027
Associate's Degree	\$ 456,998	\$ 928,863	\$ 1,393,239
Bachelor's Degree	\$ 636,885	\$ 1,290,385	\$ 1,935,523
Master's Degree	\$ 742,787	\$ 1,503,067	\$ 2,254,546
Doctorate Degree	\$ 986,222	\$ 1,991,683	\$ 2,987,470
Professional Degree	\$ 1,123,734	\$ 2,267,567	\$ 3,401,297
Differential Compared to High School Graduates			
Some College	\$ 62,231	\$ 125,269	\$ 187,904
Associate's Degree	\$ 135,877	\$ 273,409	\$ 410,116
Bachelor's Degree	\$ 315,764	\$ 634,932	\$ 952,400
Master's Degree	\$ 421,665	\$ 847,614	\$ 1,271,423
Doctorate Degree	\$ 665,101	\$ 1,336,229	\$ 2,004,347
Professional Degree	\$ 802,612	\$ 1,612,114	\$ 2,418,174

CONCLUSIONS

KVCC ADDED VALUE

KVCC is an important contributor to Maine's economy and vital to that of the local four-county service area:

Total annual economic impact — **\$47 million**.

- Labor income impact — **\$17.6 million**.
- KVCC employees generate:
 - **\$2.9 million** in state & local taxes, and
 - **\$4.7 million** in federal taxes annually.

For every state dollar of industry output resulting from the **\$6.8 million** state investment, **\$4.18** is generated in economic activity by KVCC for the state of Maine.

Lifetime earnings differential (KVCC graduates vs. those with only a high school diploma) = **\$603 million value added (GDP)** over 30 years or **\$20.1 million** annually.

Approximately 90% of KVCC graduates remain in the State of Maine, contributing an added value (GDP) to Maine's economy by virtue of their lifetime earnings.

NOTES



Kennebec Valley Community College

92 Western Avenue

Fairfield, Maine 04937

Admissions: (207) 453-5822

General Information: (207) 453-5000