Postbaccalaureate Program Expansion Feasibility Study

Directed by SJR 170

Contracted by Kentucky Council on Postsecondary Education

Prepared by Deloitte Consulting

Murray State Feasibility Study

Interim Joint Committee on Agriculture

December 19, 2024

Full Report | Table of Contents

Executive Summary

Scope of Study

EXECUTIVE SUMMARY

SJR 170 Study Overview

The Kentucky Council on Postsecondary Education (CPE) contracted with Deloitte Consulting between August and November 2024 to conduct four feasibility studies and offer recommendation regarding the new program approval process going forward.

The study evaluates the feasibility of launching these four new postbaccalaureate programs:

EKU

A doctoral program for professional practice and licensure in **osteopathic medicine (DO)** at **Eastern Kentucky University**

WKU

One or more PhD programs leading to an **R2 "High Research Activity" designation** from the Carnegie Classification at **Western Kentucky University**

MURRAY STATE UNIVERSITY

A doctoral program for professional practice and licensure in **veterinary medicine (DVM)** at **Murray State University**

KENTUCKY STATE UNIVERSITY

A **Doctor of Philosophy (PhD)** in Integrated Agroecology and Sustainable Agriculture at **Kentucky State University**

The study also offers recommendations to CPE and policy leaders regarding the evaluation and approval of future program proposals.

CPE

EXECUTIVE SUMMARY

Murray State University Proposal Overview

Proposal and Institution Overview

Institutional Background

- Murray State University (Murray State) is a regional public institution located in Murray, Kentucky, with a headcount enrollment of nearly 9,000 undergraduate and graduate students[1].
- Murray State has proposed a doctoral program for professional practice and licensure in veterinary medicine, utilizing a distributive model for veterinary education. This would be the first veterinary medical (DVM) program in Kentucky.

Institutional Motivating Factors

- Help address the shortage of rural veterinarians at both the national and state levels and support Kentucky's agriculture industry.
- Provide opportunities for members of Kentucky's regional and rural communities to obtain a veterinary education close to home and offer their existing pre-veterinary students an opportunity to continue their studies.
- Leverage existing agriculture school's facilities (e.g., Breathitt Veterinary Center) to expand veterinary education.

What is a Distributive Model of Veterinary Medicine?

In a distributive model of veterinary education, veterinary students complete their core science, anatomy, and pre-clinical skills curricular requirements in a traditional classroom setting on-campus and complete their clinical education with a distributed network of clinical partners, including private practices, urgent care clinics, emergency clinics, referral hospitals, shelters, zoos, and wildlife rehabilitation centers. This contrasts with a traditional model of veterinary education, where Doctor of Veterinary Medicine (DVM) students complete most of their clinical education in affiliated teaching hospitals.

Fast Facts[2]

Fall 2027
Target Program Launch Date

70
Target Cohort Size by Year 5

280
Target Enrollment by Year 5

15
Estimated Incremental Faculty by Year 5

42
Estimated Staff and Administrators by Year 5

Notes: 1) Enrollment headcounts exclude Dual Credit students; 2) Faculty and staff estimates are based on peer analysis and are subject to change. Faculty count includes current Murray State faculty who may teach in the College of Veterinary Medicine (CVM). Sources: Murray State stakeholder interviews, proposal, and related materials; KY CPE Data Center.

Approach and Methodology

EXECUTIVE SUMMARY

Guiding Principles

The following guiding principles formed the foundation of our approach, ensuring rigor and objectivity throughout our feasibility study.

Guiding Principle	Description
School-Level Collaboration Balanced with Evidence-Based Independence	• Actively engaged university leadership throughout the analysis for their input and awareness. • Maintained the overall validity and independence of the analysis by mapping final conclusions to validated and reputable data sources.
Holistic and Comprehensive Assessment	• Considered an expansive array of feasibility metrics, both quantitative and qualitative. • Provided decision-makers with a comprehensive understanding of the proposals under review.
Consistent Approach while Considering University Specifics	• Applied a consistent overarching approach to all feasibility studies while independently evaluating each institution's unique attributes and contexts.
Stakeholder Viewpoints	• Included diverse stakeholder perspectives in the assessment. • Developed a holistic understanding of the program proposals, processes, and statutes under consideration.
Forward-Thinking Perspective	• Reviewed the programs, processes, and statutes reviewed from the perspective of both the current and future operating environment. • Considered expected future changes in the higher education ecosystem.
Materiality of Impact	• Prioritized attention on analysis elements that significantly impact feasibility outcomes, engaging in deeper analysis for high impact areas.
Balanced Focus on Kentucky Needs and University Goals	• Dedicated to understanding how proposals could help to address the needs of the Kentucky Commonwealth as well as unique goals of individual universities.

EXECUTIVE SUMMARY

Feasibility Study Methodology | Qualitative Inputs

The project team engaged with a diverse range of internal and external stakeholders, including academic and administrative leaders, government officials, industry professionals, and peer institution leaders, to gather comprehensive feedback and insights.

75

UNIVERSITY FACULTY, STAFF, ADMINISTRATORS

Engaged with 75+ academic and administrative leaders (including provosts, deans, and faculty and staff representatives) through on-campus and virtual meetings.

11

UNIVERSITY PRESIDENTS AND CPE LEADERSHIP

Met with each university president to discuss the vision and strategy for the new programs of study at their institution. Led seven interviews with CPE leaders and maintained regular communication with CPE through weekly status calls to promote alignment and transparency.

5

ON-SITE VISITS

Visited all four campuses as well as CPE in person to gain first-hand perspective to each campus, visiting relevant facilities and engaging with key stakeholders where possible.

12

GOVERNMENT AND COMMUNITY OFFICIALS

Engaged with more than twelve Kentucky government officials, including state Senators, Representatives, the Warren County Judge/Executive, the Governor's office, and the Bowling Green Chamber of Commerce.

7

PEER INSTITUTIONS

Conducted seven interviews with leaders from other Kentucky universities (UK, KCTCS, Morehead) and peer institutions (Auburn, LMU, Texas Tech, UMES) to gain perspectives, financial benchmarks, and lessons learned. Benchmarked against 100+ additional peer institutions using publicly available data.

9

INDUSTRY LEADERS AND EMPLOYERS

Met with leaders from industry associations, reviewed letters from interested industry practitioners, and engaged with potential employers and clinical partners.

EXECUTIVE SUMMARY

Feasibility Study Methodology | Quantitative Inputs

The project team conducted a thorough review of internal documents and data, alongside external benchmarks and trends, to independently validate institutional assumptions and provide a comprehensive feasibility evaluation.

University Provided

Reviewed 220+ documents from CPE, EKU, KSU, Murray State, and WKU, covering academic, student, financial, strategic, personnel/employee, and facilities data (e.g., strategic plans, feasibility studies, program proposals, organizational charts, university policies). Analyzed CPE's Interactive Data Center for **publicly reported data** on enrollment, academic, and student success metrics.

Data Categories

- ❑ Enrollment Data
- ❑ Financial Data
- ❑ Student Success Data
- ❑ Salaries Data
- ❑ Program Budget Projections

External Sources

Validated institutional assumptions by reviewing agency reports (e.g., credit agencies, government entities) as well as accreditation standards, policies, and requirements from COCA[1], AVMA[2], and SACSCOC[3]. Researched **peer benchmarking data** for projections using reputable sources and insights from external stakeholder interviews.

Data Categories

- ❑ Demographic Data
- ❑ Labor Market Data
- ❑ Peer Institutional Benchmarks
- ❑ Kentucky Performance Funding Model Data
- ❑ Industry Association Data
- ❑ Accreditation Requirements

Notes: 1) Commission on Osteopathic College Accreditation (COCA); 2) American Veterinary Medical Association (AVMA); 3) Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

Feasibility Study Methodology | Program Evaluation Criteria

The project team evaluated the feasibility of each program proposal across nine dimensions in alignment with SJR 170. Each feasibility study in this report is organized around these nine criteria, found below.

SJR-170 Required Current State Considerations

Financial Health

The institution's **recent financial performance** as measured by net operating margins, balance sheet ratios, capital expenditures, and Composite Financial Index (CFI).

Research Infrastructure

The **sufficiency of research facilities**, funding availability, and institutional support for faculty and student research initiatives.

Student Success

The institution's **historical performance** on student success outcomes, such as graduation rates, retention rates, and performance funding metrics.

Faculty Recruitment

The institution's ability **to attract and retain** qualified faculty members.

Workforce Alignment

The alignment of academic programs with current and future workforce needs, **including partnerships with industry** and employment opportunities for graduates.

Cost-Benefit Analysis

The costs associated with **launching and operating** new programs relative to the expected returns on investment.

Student Demand

The current and projected student interest and **enrollment trends** for specific programs or fields of study.

Accreditation Standards

The institution's ability to meet the **standards and requirements**, necessary to obtain and maintain program accreditation.

Clinical Placements

The availability and quality of clinical placement **opportunities for students** in programs that require hands-on, practical experience.

Summary of Findings

EXECUTIVE SUMMARY

Feasibility Assessment: Murray State University

Murray State University has proposed launching a new college of veterinary medicine (CVM) with a target enrollment of 70 students per cohort, with new cohorts starting annually in 2027.

SJR-170 Required Current State Considerations

Financial Health	G	Murray State's financial health assessment points to strong financial management practices and a healthy balance sheet. Financial pressures observed (e.g., slowed tuition revenue growth) are common across public higher education.
Student Success	G	Murray State's undergraduate retention rates and six-year graduation rates have consistently outperformed their peer group average, and Murray State has performed better than or equivalent to other KY public comprehensive institutions on 8 of 9 metrics tracked in the KY performance funding model.
Research Infrastructure	G	Murray State's research expenditures are comparable to the other KY regional comprehensives and have grown by ~30% across the last five years. Murray State also possesses veterinary research equipment in their Breathitt Veterinary Center and other facilities.
Cost-Benefit Analysis	Y	Murray State's CVM is projected to break-even under moderate planning assumptions in FY30 without ongoing state support and anticipated to generate significant economic impact in Calloway County and KY. Murray State's existing faculty and infrastructure in animal sciences offset some of the significant startup costs.
Student Demand	G	Student demand for seats in DVM programs is high, even amid growth in the program pipeline as new CVMs launch.
Workforce Alignment	Y	Industry experts disagree about the demand for new veterinarians at the national level, though there is an undisputed shortage of rural large animal vets in KY. Some experts purport that a CVM cannot meaningfully address the rural shortage, though Murray State has a record of successfully placing graduates in rural settings.
Faculty Recruitment	Y	There is presently a shortage of veterinary faculty in the US, which is positioned to worsen as planned new vet schools launch in the next decade. Murray State has several existing veterinary faculty on staff who can teach in this program, mitigating the risk.
Accreditation Standards	Y	To meet accreditation standards, Murray State will need to invest significantly to provide sufficient facilities for the housing of animals used in teaching and research, to satisfactorily produce substantial related research, and to ensure quality of education and facilities at distributed clinical sites.
Clinical Placements	Y	In a KVMA[1] survey, over 170 veterinarians across KY expressed interest in supporting clinical education for Murray State students, though a distributive clinical education model requires an expansive partner network, and Murray State may need to look out of state to fulfill its needs, particularly for veterinary specialties.

Overall Feasibility Assessment: Murray State has a strong foundation upon which to build a new CVM, including strong institutional finances, existing facilities and expertise in animal sciences, and the proposed CVM would contribute positively to the state and local economy. However, opposition from the veterinary industry in KY could hamper their pursuit, calling into question the alignment of this program with state workforce needs, particularly considering the perceived effectiveness of existing pathways for KY residents to pursue vet education. Faculty recruitment also poses a risk due to current industry shortages.

Assessment Key

G No/few feasibility concerns Y Some feasibility concerns R Significant feasibility concerns

Note: 1) Kentucky Veterinary Medical Association (KVMA)

Detailed Feasibility Studies

Murray State | Doctoral Program for Professional Practice and Licensure in Veterinary Medicine

Financial Health Assessment

Overall Feasibility Assessment

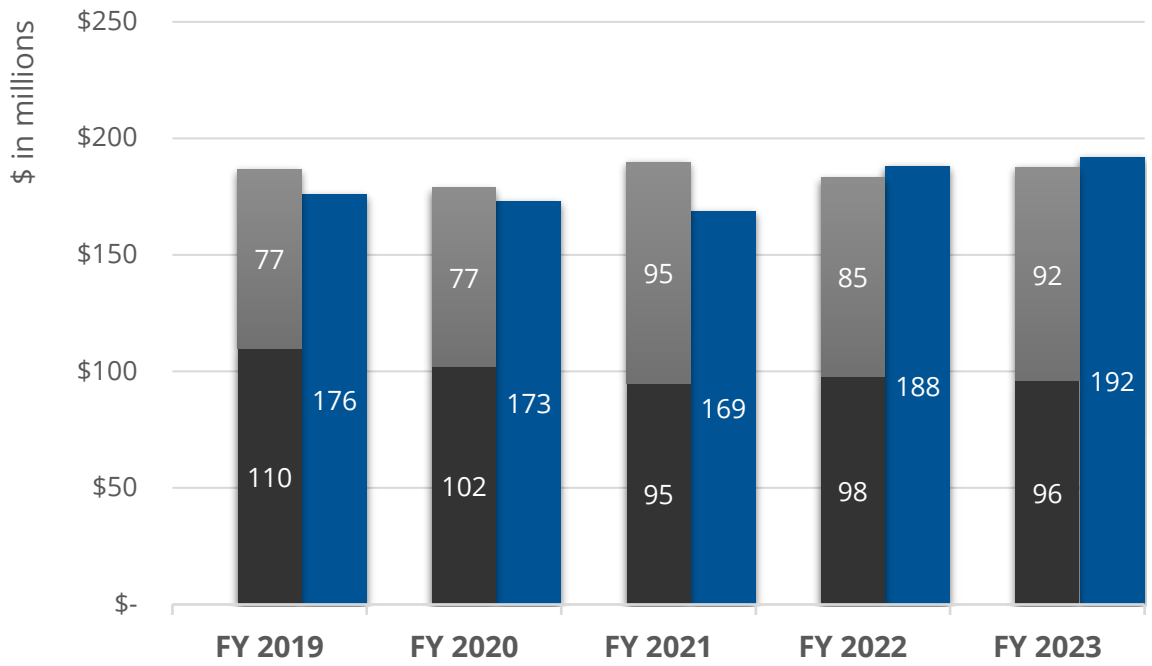
Financial Health 	G	Murray State's financial health assessment points to strong financial management practices and a healthy balance sheet. Financial pressures observed (e.g., slowed tuition revenue growth) are common across public higher education.

MURRAY STATE | COLLEGE OF VETERINARY MEDICINE

Financial Health Assessment | Net Position

From Fiscal Year (FY)19 to FY21, Murray State recorded positive changes in net position (from audited financial statements, adjusted to exclude Pension/Other Postemployment Benefits (OPEB) Expense Adjustments) from $10.7M in FY19 to $20.8M in FY21. In recent years, slowed revenue growth and rising expenses have posed some financial challenges.

Murray State Actual Ending Results (FY 2019 – FY 2023)



	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Chg in Adjusted Net Position	*$10.7M*	*$5.9M*	*$20.8M*	*($4.9M)*	*($4.4M)*

■ Adjusted Operating Expenses [1] ■ Operating Revenues ■ Net Nonoperating Revenues [2]

Key Takeaways

Murray State has managed to mostly keep **total revenues balanced with total expenses**. However, expense growth (9.1%) over the past 5 years is significantly outpacing stagnant revenue growth (<1%).

The main driver of revenues for Murray State, **Net Tuition and Fees, has declined in recent years from $60.5M in FY 2019 to $51.1M in FY 2023.** Total undergraduate enrollment growth during this time remained stagnant (<1%). Moody's notes that "net tuition revenue has been constrained by state tuition caps as well as weak regional demographics."

The main drivers of expenses for Murray State, Instruction and Operation/Maintenance of Plant**, have grown in recent years from $61.1M and $20.0M in FY 2019 to $62.6M and $22.8M in FY 2023 respectively.**

Murray State has been able to keep total revenues balanced with total expenses through **increased State Appropriations and Federal/State Grants and Contracts.** Appropriations from the Commonwealth of Kentucky increased 14% over the last five years.

Murray State has generally balanced growth in net position; however, the institution, along with many other public institutions in Kentucky, is facing growing financial pressure from slowed net tuition revenue growth and high fixed costs, which may limit its ability to better align revenues with expenses.

Notes: 1) Adjusted to not include State Pension Expense (Benefit) GASB and State OPEB Expense (Benefit) GASB 75; 2) Include Net Nonoperating Revenues, State Capital Appropriations, Other Insurance Proceeds, Capital Gifts, Additions to Permanent Endowments Sources: Murray State Audited Financial Statements, Moody's Rating Report (May 2024).

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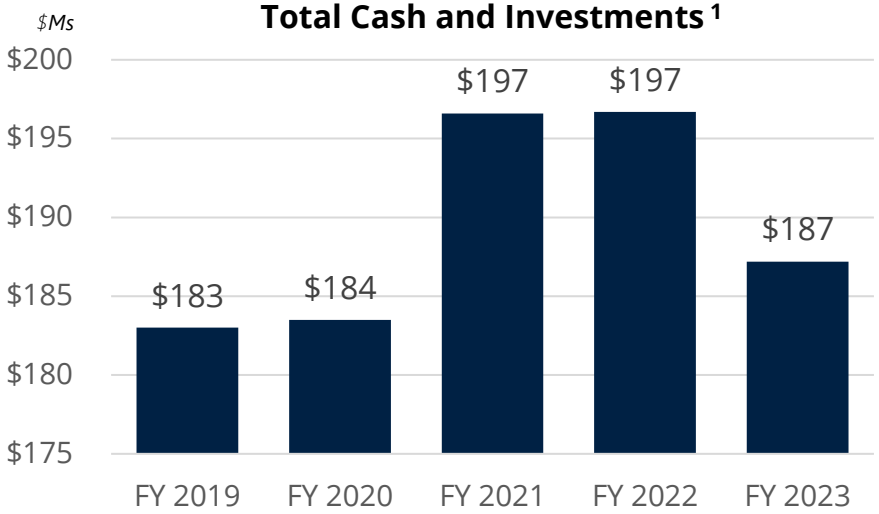
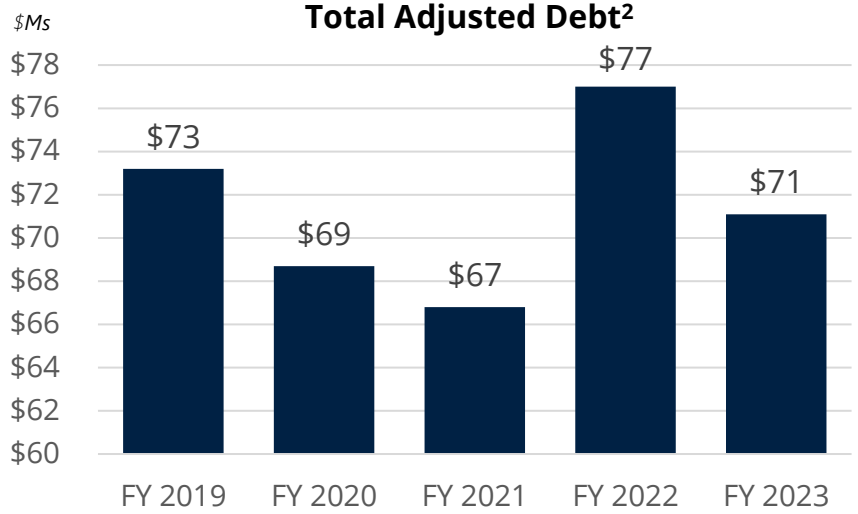
Financial Health Assessment | Balance Sheet Summary

Despite pressures on operational performance, Murray State's balance sheet demonstrates relatively steady wealth and liquidity, with Cash and Investments (C&I) covering total debt 2.6x.

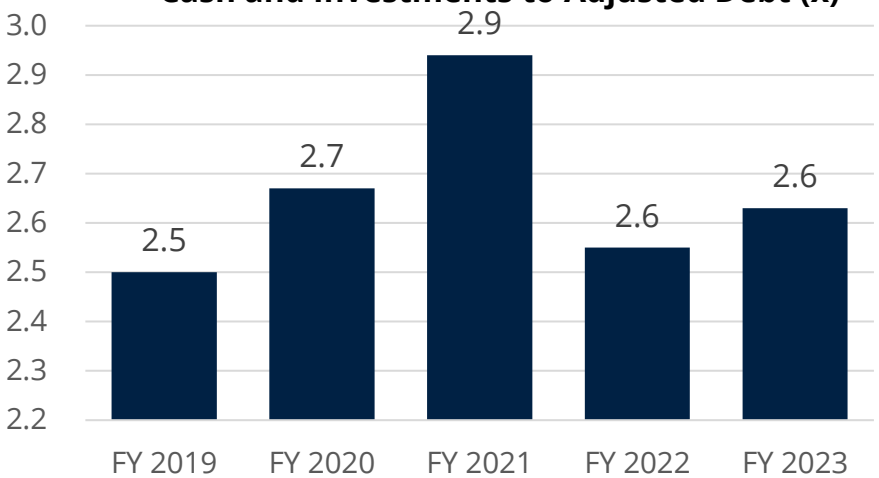
Total Cash and Investments [1]



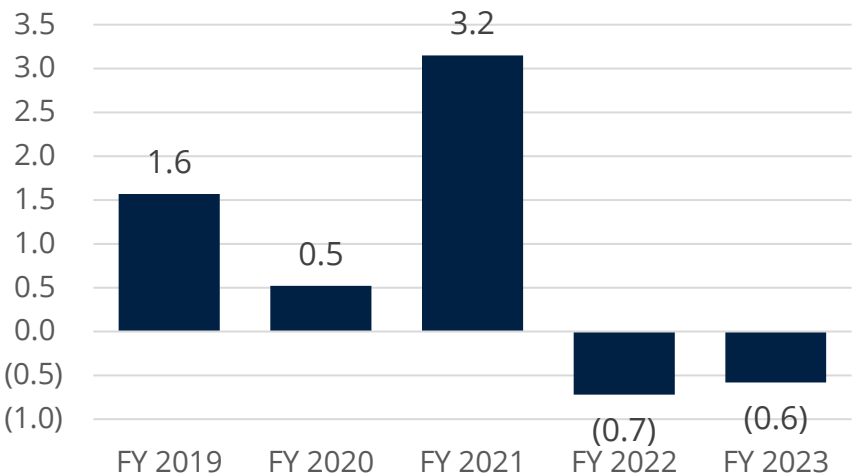
Total Adjusted Debt[2]



Cash and Investments to Adjusted Debt (x)



Annual Debt Service Coverage (x)[3]



Key Takeaways

Steady Cash and Investments
Moody's notes that Murray State's management has a good track record of expense management, which has supported the university's good financial policy and is reflected in their total C&I in recent years.

Steady Total Adjusted Debt
Total Adjusted Debt decreased 3% from FY 2019 to FY 2023, remaining relatively steady in recent years.

Manageable Leverage Position
Despite recent financial challenges from operations, a manageable debt load with C&I at 2.6x debt has put the institution in a strong and flexible position for funding future strategic initiatives and objectives.

Notes: 1) Reflects Cash and Cash Equivalents, Restricted Cash and Cash Equivalents, Restricted Investments; 2) Reflects Leases Payable (Current Portion), Long-Term Debt (Current Portion), Leases Payable, Long-Term Debt; 3) Reflects Principal Paid on Capital Debt, Interest Paid on Capital Debt, Interest Paid on Leased Assets. Sources: Murray State Audited Financial Statements, Moody's Rating Report (May 2024).

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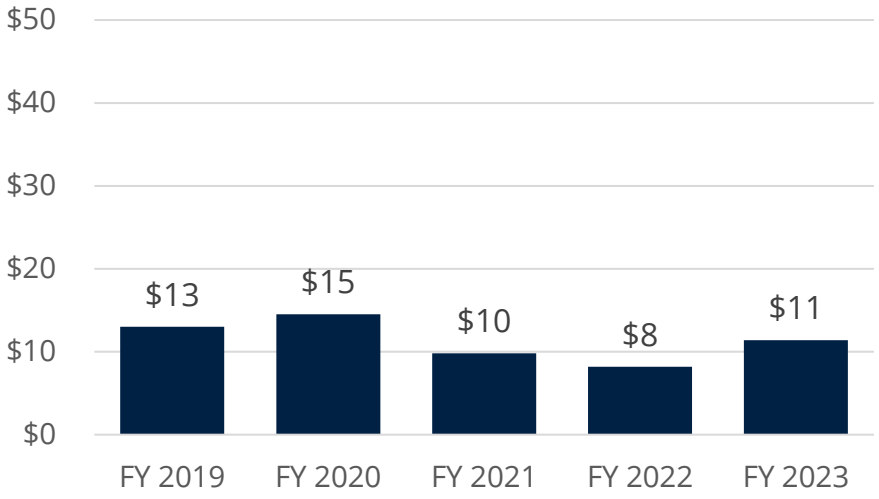
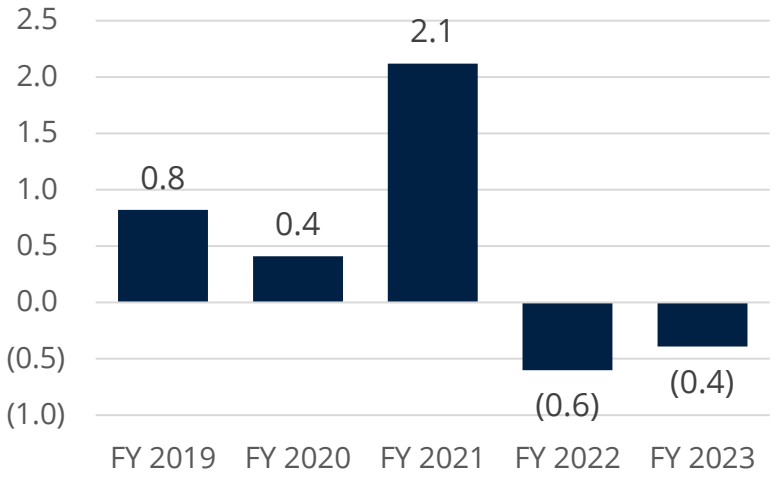
Financial Health Assessment | Capital Expenditures

Murray State's annual capital spend is mostly in line with depreciation expense. Expenditures are supported by operating performance and state aid.

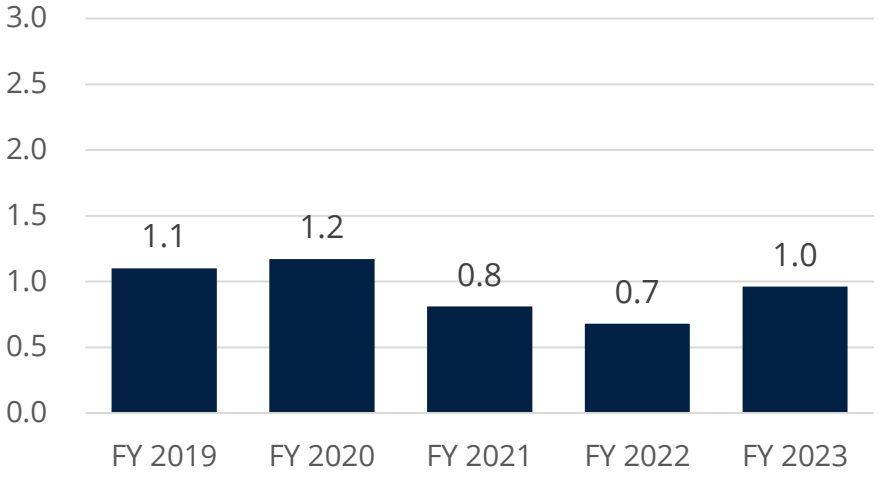
Capital Expenditures [1]



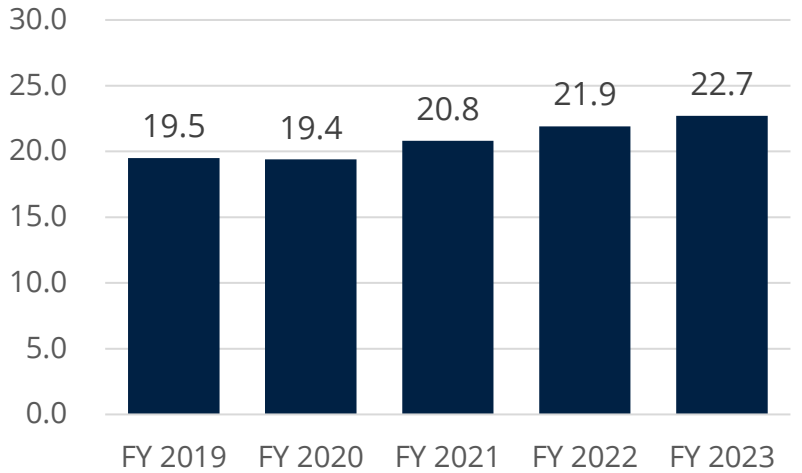
Change in Adjusted Net Position [2] to CapEx (x)



Capital Spending Ratio (x)



Average Age of Plant (Years)



Key Takeaways

Supported Capital Spending
Capital spend peaked in FY 2020 with spend of nearly $15M and has mostly kept pace with depreciation and the aging of facilities.

Strategic Growth
The uptick in capital investments in the last few years has been bolstered by improved government support for operations and capital, as noted by Moody's.

Further Growth of Capital Planning
Moody's highlights that Murray State's high average age of plant represents a challenge to its credit and financial position. Continuing to plan around current capital needs can enable the institution to more strategically allocate and manage resources going forward.

Note: 1) Reflects Purchase of Capital Assets; 2) Adjusted to not include Pension/OPEB Expense Adjustments. Sources: Murray State Audited Financial Statements; Moody's Rating Report (May 2024).

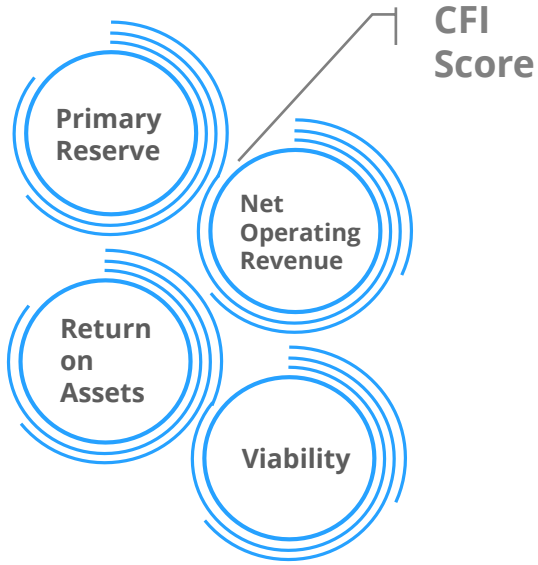
MURRAY STATE | COLLEGE OF VETERINARY MEDICINE

Financial Health Assessment | Composite Financial Index (CFI)

Murray State's Composite Financial Index (CFI) score of 5.91 in 2023 provides a point-in-time indicator of strong financial health that supports focusing resources to compete in future states.

The four ratios are **primary reserve, net operating revenue , return on assets, and viability**. These ratios **gauge the fundamental elements of the financial health** of an institution. The composite score reflects the overall relative financial health along a scale from **negative 4.0 to positive 10.0** for higher education institutions. A score greater than 3 is considered relatively financially healthy.

CFI Components



Key Ratios

Primary Reserve Ratio

$$\frac{\text{expendable net assets}}{\text{total expenses}}$$

Net Operating Revenue Ratio

$$\frac{\text{net operating income}}{\text{total unrestricted operating revenues}}$$

Return on Assets Ratio

$$\frac{\text{change in net assets}}{\text{total net assets}}$$

Viability Ratio

$$\frac{\text{expendable net assets}}{\text{long-term debt}}$$

Murray State CFI Score[1,2]	Ratio	CFI Score
Primary Reserve	0.72x	1.90
Net Operating Revenue	-1%	-0.11
Return on Assets	9%	0.86
Viability	3.89x	3.27
Total	---	5.91

Notes: 1) Adjusted to not include Pension Expense Adjustments and OPEB expense adjustments; 2) Ratio calculations include Component Unit (CU) data. Sources: Murray State Audited Financial Statements; Higher Learning Commission CFI Worksheet ; TIAA The Financial Resilience of Independent Colleges and Universities (2017).

Student Success Assessment

Overall Feasibility Assessment

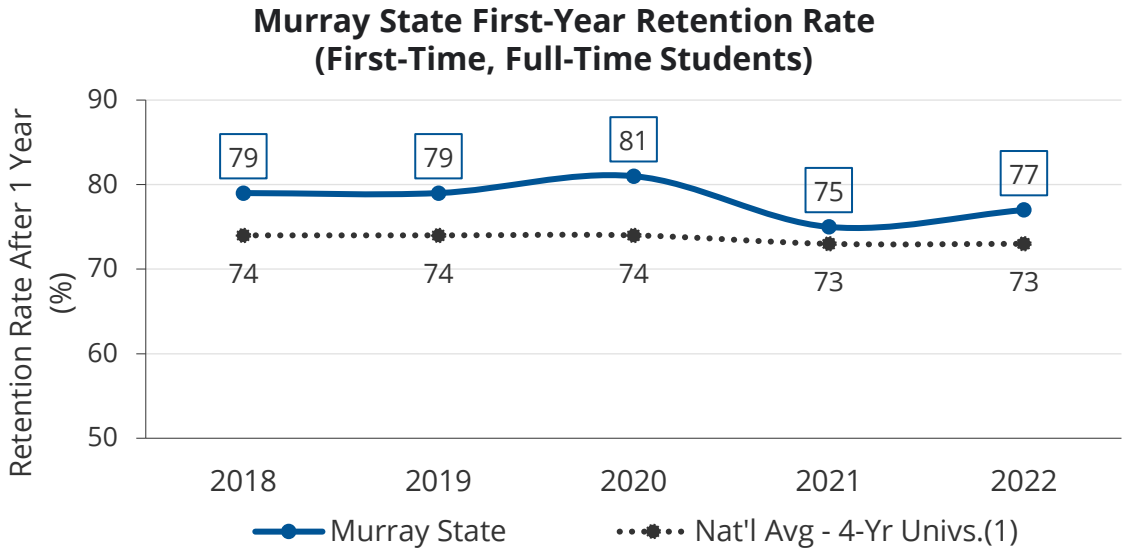
Student Success

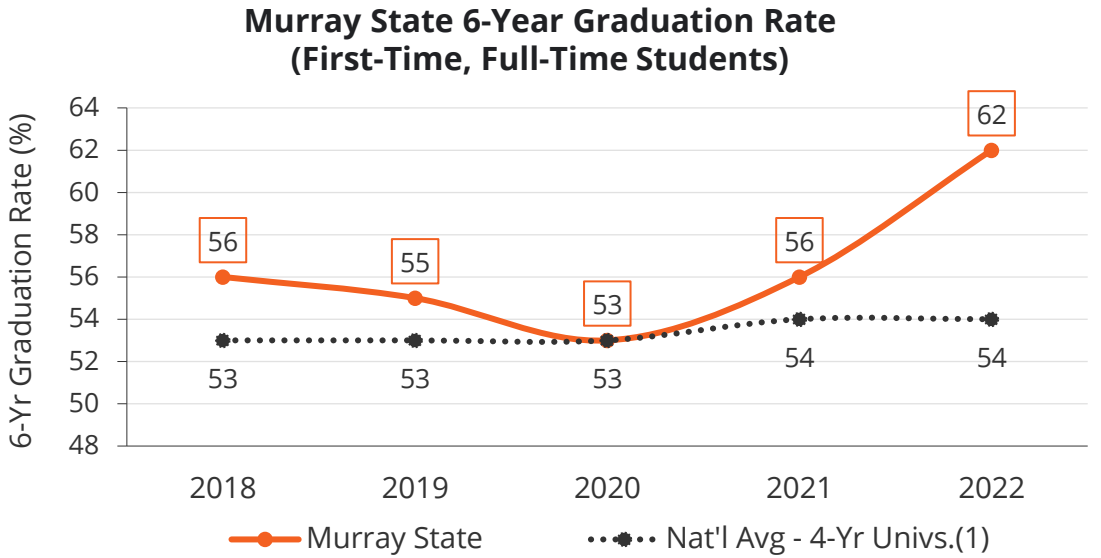
G

Murray State's undergraduate retention rates and six-year graduation rates have consistently outperformed their peer group average, and Murray State has performed better than or equivalent to other KY public comprehensive institutions on 8 of 9 metrics tracked by the KY performance funding model.

Current State Performance on Key Student Success Metrics

Murray State's undergraduate retention rates and six-year graduation rates have consistently outperformed their peer group average.





Retention rates recovering and above national averages…

- First-to-second year retention rates for first-time, full-time students has remained consistently above the national average over the last 5 years.
- First-year retention rates fell significantly from Fall 2020 to Fall 2021 by 6 percentage points. In Fall 2022, Murray State's first-year retention rebounded slightly, representing a partial recovery to pre-pandemic highs.

…while graduation rates at a 5-year high

- Across the five-year period from 2018 to 2022, Murray State had the largest net increase in six-year graduation rates among all Kentucky comprehensive universities at 6 percentage point.
- Murray State's graduation rates ranked the highest among Kentucky comprehensive universities in Fall 2022.

Notes: 1) National averages include all public and private not-for-profit four-year colleges and universities as reported in IPEDS. Source: IPEDS Data Dashboard.

MURRAY STATE | COLLEGE OF VETERINARY MEDICINE

Current State Performance on the Comprehensive Funding Model

Murray State outperformed or performed equivalent to the KY comprehensive average on eight of the KPIs incentivized by the model.

CPE utilizes a performance-based funding model that aligns funding with institutional performance on desired state policy goals. After each institution receives their "funding floor", the remaining resources are distributed based on the funding formula:

35% *based on student success metrics* **35%** *based on course completions* **30%** *based on operational support.*[1]

From 2013-14 to 2022-23, Murray State performed better than or equivalent to other KY public comprehensive institutions on **eight out of nine KPIs:**

- Total Bachelor's Produced
- STEM+H[2] Bachelor's Produced
- Low Income Bachelor's Produced
- URM[3] Bachelor's Produced
- Progression at 30 Hours
- Progression at 60 Hours
- Progression at 90 Hours
- Student Credit Hours Earned
- FTE[4] Student Enrollment

- Murray State performed 10 or more percentage points better than comprehensives overall on STEM+H Bachelor's, Low Income Bachelor's, Progression at 60, Progression at 90 Hours, and Total Bachelor's Produced.

Key

- Performed better than or equivalent to KY comps average
- Performed worse than KY comps average

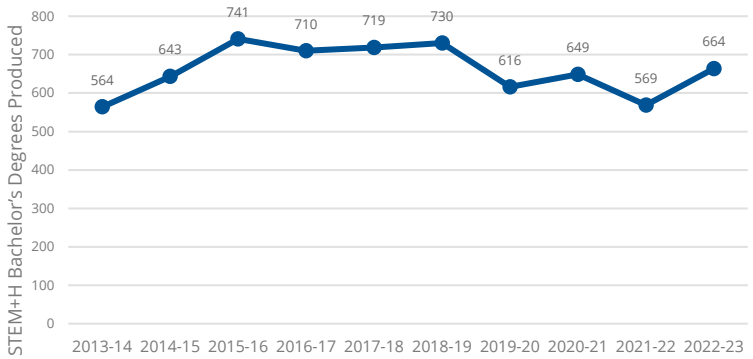
Notes: 1) Funding proportions were amended to 40% for student success metrics and 30% for course completions for the 2024-25 funding distribution; 2) Science, Technology, Engineering, Math, and Health Sciences (STEM+H); 3) Underrepresented Minority (URM); 4) Full-Time Equivalent (FTE). Sources: 13 KAR 2:120E; Performance Funding - Ky. Council on Postsecondary Education; KRS 164.092; Workbook: Kentucky Postsecondary Education Interactive Data Dashboard; Funding Model Data provided by CPE.

Current State Performance on the Comprehensive Funding Model

Murray State has recorded growth in STEM+H, URM, and Low-Income Bachelor's produced.

Data Trends

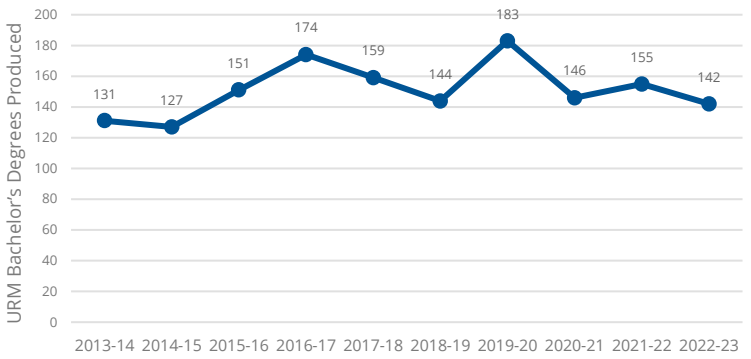
STEM+H Bachelor's Produced



18% Murray State | **7%** KY Comps[2]

number of STEM+H Bachelor's produced from 2013-14 to 2022-23

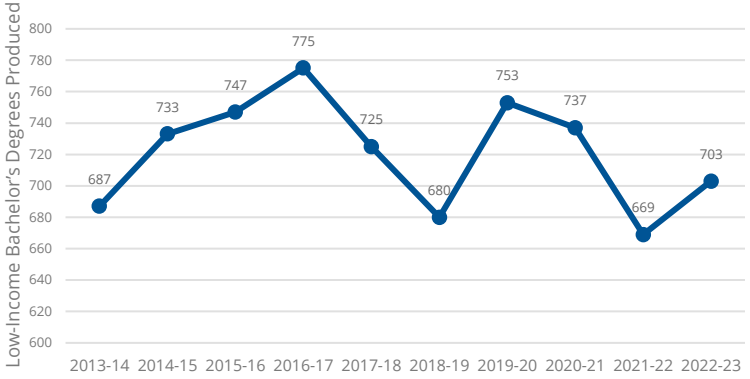
Underrepresented Minority Student (URM) Bachelor's Produced[1]



8% Murray State | **23%** KY Comps

number of URM Bachelor's produced from 2013-14 to 2022-23

Low-Income Bachelor's Produced



2% Murray State | **15%** KY Comps

number of Low-Income Bachelor's produced from 2013-14 to 2022-23

Notes: 1)The URM Bachelor's Degrees metric has been amended to "underrepresented students", defined as "first generation college students", for the 2024-25 funding distribution. 2) KY Comps refers to all six Kentucky public comprehensive universities: Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, and Western Kentucky University. Source: Funding Model Outcomes provided by CPE.

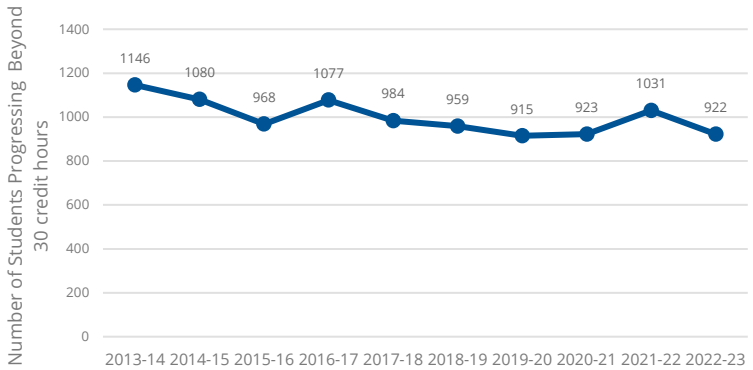
MURRAY STATE | COLLEGE OF VETERINARY MEDICINE

Current State Performance on the Comprehensive Funding Model

Murray State has experienced declines in all three progression metrics across the past decade, though those declines have been smaller or comparable than those recorded at other public comprehensives in Kentucky.

Data Trends

Progression @ 30

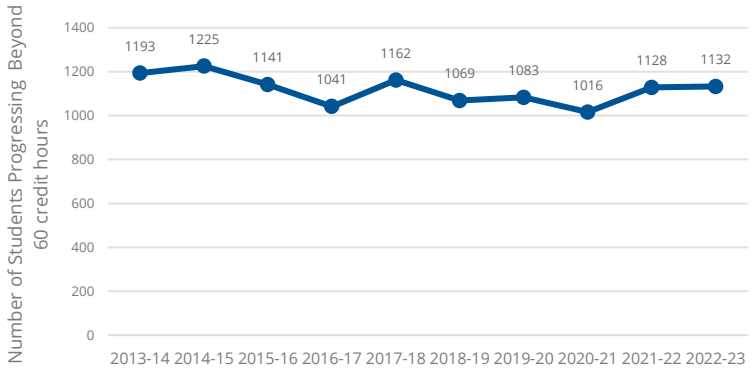


20% Murray State

20% KY Comps[1]

number of undergraduate students @ 30 hours from 2013-14 to 2022-23

Progression @ 60

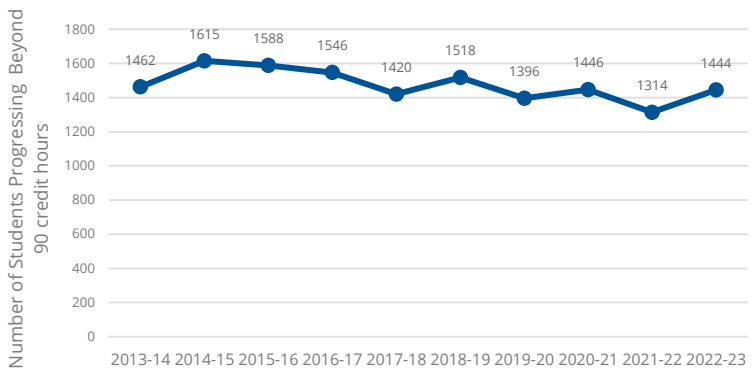


5% Murray State

15% KY Comps

number of undergraduate students @ 60 hours from 2013-14 to 2022-23

Progression @ 90



1% Murray State

11% KY Comps

number of undergraduate students @ 90 hours from 2013-14 to 2022-23

Notes: 1) KY Comps refers to all six Kentucky public comprehensive universities: Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, and Western Kentucky University. Source: Funding Model Outcomes provided by CPE.

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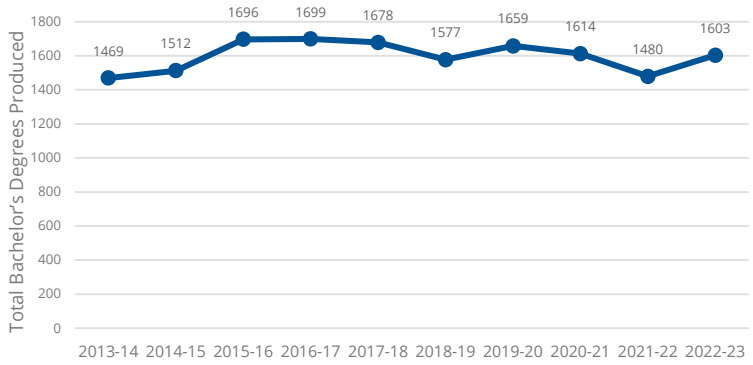
Current State Performance on the Comprehensive Funding Model

While Murray State has recorded growth in total bachelor's produced, their enrollment and credit hours have decreased similarly to KY comprehensives overall.

Data Trends

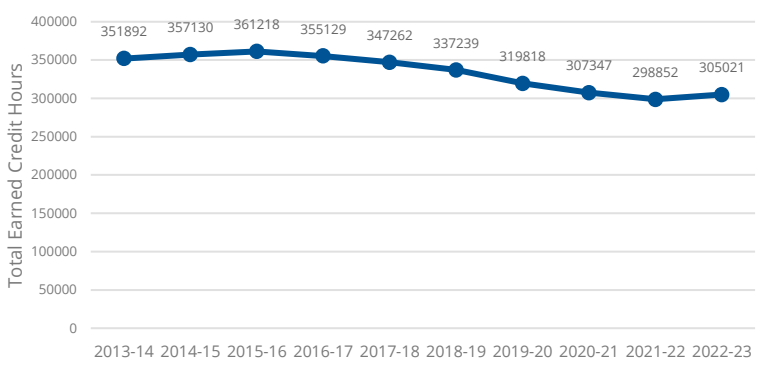
Total Bachelor's Produced



9% Murray State | **8%** KY Comps[1]

number of Total Bachelor's produced from 2013-14 to 2022-23

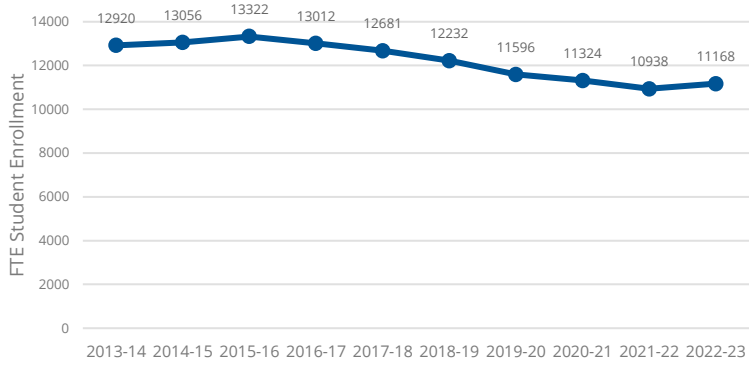
Student Credit Hours Earned



14% Murray State | **16%** KY Comps

number of Student Credit Hours earned from 2013-14 to 2022-23

FTE Student Enrollment



14% Murray State | **21%** KY Comps

number of FTE Student Enrollment from 2013-14 to 2022-23

Notes: 1) KY Comps refers to all six Kentucky public comprehensive universities: Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, and Western Kentucky University. Source: Funding Model Outcomes provided by CPE.

Research Infrastructure Assessment

Overall Feasibility Assessment

Research Infrastructure	G	Murray State's research expenditures are comparable to the other KY regional comprehensives and have grown by ~30% across the last 5 years. Murray State also possesses veterinary research equipment in their Breathitt Veterinary Center and other facilities.

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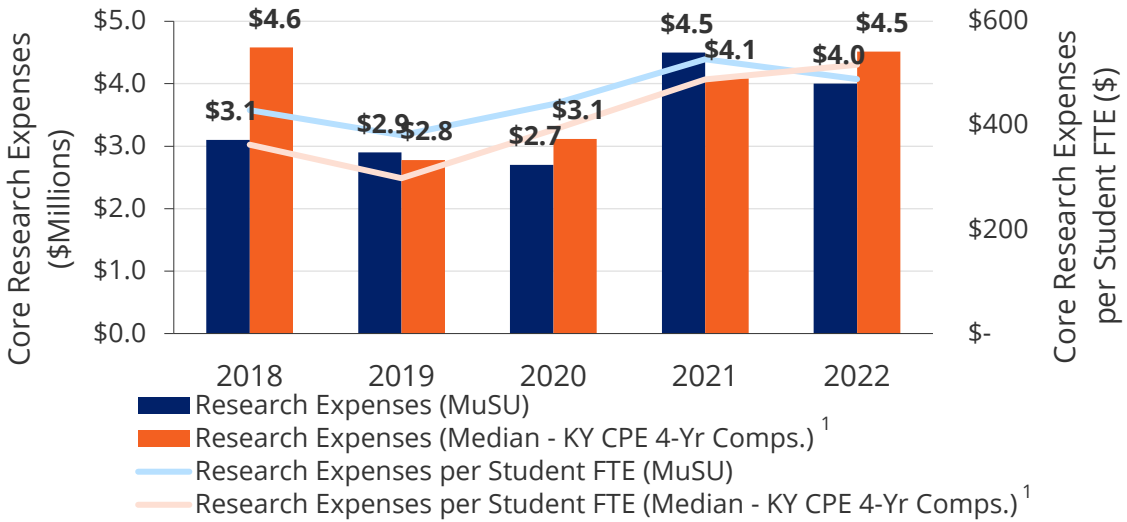
Current State Research Infrastructure

Murray State has increased its research expenditures across the last five years and has foundational infrastructure to support research growth.

Murray State Core Research Expenses (2018-2022)



Murray State's total core research expenses grew by over 45% from 2018 to 2021. Although core research spending decreased from 2021 to 2022, total core research expenses still grew by close to 30% over a five-year period.

Murray State's research investment has been comparable to those of its Kentucky comprehensive peers. Murray State's total core research expenses was equal to or above the peer median for four out of the last five years.

Research Infrastructure Highlights

Office of Research and Creative Activity (ORCA)

Murray State's Office of Research and Creative Activity supports faculty-mentored scholarly and research opportunities for undergraduate/graduate students. ORCA offers grants and organizes campus/community events to support student and faculty research in all disciplines.

Breathitt Veterinary Center (BVC)

The BVC is a diagnostic laboratory and research facility that is part of Murray State, located in Hopkinsville, Kentucky. The center provides a wide range of veterinary services to support animal and public health.

Veterinary Technology/Pre-Veterinary Facilities

The Veterinary Technology/Pre-Veterinary Medicine Program is located on the main farm complex in the A. Carman Animal Health Technology Center. The center houses classrooms, faculty offices, laboratories, a pharmacy, surgery suite, kennels and a radiology laboratory. The program is equipped with state-of-the-art supplies and equipment.

Notes: 1) KY Comps refers to all six Kentucky public comprehensive universities: Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, and Western Kentucky University. Sources: IPEDS Data Center, Murray State's Office of Research and Creative Activity; AVMA Accreditation Policies and Procedures

Cost-Benefit Analysis

Overall Feasibility Assessment

Cost-Benefit Analysis 	Y	Murray State's CVM is projected to break-even under moderate planning assumptions in FY30 without ongoing state support and anticipated to generate significant economic impact in Calloway County and KY. Murray State's existing faculty and infrastructure in animal sciences offset some startup costs.

Assumptions Driving Financial Model

The Veterinary School timeline, Murray State stakeholder discussions, market research, and competitive analysis inform the drivers behind the financial model.

	Line Item	Forecast Approach	Moderate Driver	Conservative Driver
REVENUES	Enrollment	Murray State Proposal Materials, Market Research and Peer Comparisons	Target enrollment of 70 students per year provided by Murray State. Annual attrition of 7% is calculated based on AAVMC enrollment data.	Conservative enrollment is calculated as 85% of target enrollment. Conservative annual attrition rate estimated at two percentage points higher (9%).
REVENUES	Tuition & Fees	Murray State Proposal Materials, Market Research and Peer Comparisons	Tuition rates were provided by Murray State ($29,000 and $50,750 per year for in-state and out-of-state students respectively) in FY27. This pricing is competitive with first year resident tuition and fees at peer colleges of veterinary medicine. Tuition rate is expected to grow at 3% annually. Per Murray State, there is no plan to offer additional scholarships or institutionally funded grants to admitted students.	Tuition pricing is set the same as the moderate scenario and is expected to grow at 2%.
REVENUES	Other Operating Revenues	Murray State Proposal Materials	Estimates for the use of University Private Funds during construction period and first year of operations to fund initial start-up costs were shared by Murray State.	Same assumptions as moderate model.
EXPENSES	Faculty and Staff Salary and Benefits Costs	Murray State Proposal Materials, Murray State Historical Trends, Market Research and Peer Comparisons	Faculty and staff headcounts were calculated based on an analysis of peer institutions using the distributive model. Murray State is estimated to need to hire two administrators, fifteen faculty, and 40 staff. The number of faculty has been adjusted to account for the additional ten current faculty that Murray State anticipates supporting the Veterinary School. The personnel FTE targets initially provided by Murray State were below those of peer institutions and were subsequently adjusted by the project team to align with peer figures. Personnel salaries were provided by Murray State at $132,000 for Faculty, $44,000 for Staff, and $214,500 for Administrators. Personnel salaries forecast a 2% annual increase, based on the history of cost-of-living increases by the institution, other Kentucky public universities, and the Commonwealth. Start-up packages are not included in the model, as Murray State indicated that they do not anticipate significant cost from start-up packages for new personnel. Employee Benefits are projected at 45%, of compensation, in line with existing Murray State Operations.	Faculty and staff headcounts are the same as the moderate model. Conservative faculty and admin salaries are estimated at 15% higher than moderate scenario. Staff salaries are held constant. Conservative annual growth rate estimated at one percentage point higher than the moderate scenario (3%). Employee benefits are projected at the same rate as the conservative scenario.
EXPENSES	Rotation Payments	Murray State Proposal Materials and Market Research	Rotation Payment estimates were shared by Murray State and assume $12k fee per student per year. Rotation payments forecast a 2.7% annual increase, based on the ten-year average of annual inflation rates from the Bureau of Labor Statistics/ Consumer Price Index.	Conservative rate per student estimated at 15% higher than moderate scenario. Conservative annual growth rate estimated at 4% based on five-year average of annual inflation rates from the Bureau of Labor Statistics/ Consumer Price Index.
EXPENSES	All Other Operating Expenses	Murray State Proposal Materials	Estimates for Other Operating Expenses were shared by Murray State and are projected out assuming a 2% annual increase, based on the institution's historical expense growth rates and annual adjustments of comparative research programs. These expenses are meant to estimate all other operating costs excluding salary/fringes.	Conservative annual growth rate estimated at one percentage point higher than the moderate scenario (3%).
EXPENSES	Facilities Expense	Murray State Proposal Materials	Murray State is currently not planning to build new facilities to house the vet school. Instead, they are planning the construction of a new Veterinary Sciences building that will serve the needs of future veterinary students as well as students in their pre-vet and vet tech programs, which they have already secured funding for. Murray State plans to commence this construction project independent of the vet school. As such, these expenses are not included in the financial model, as they are not fully attributable to the vet school.	Same assumptions as moderate model.

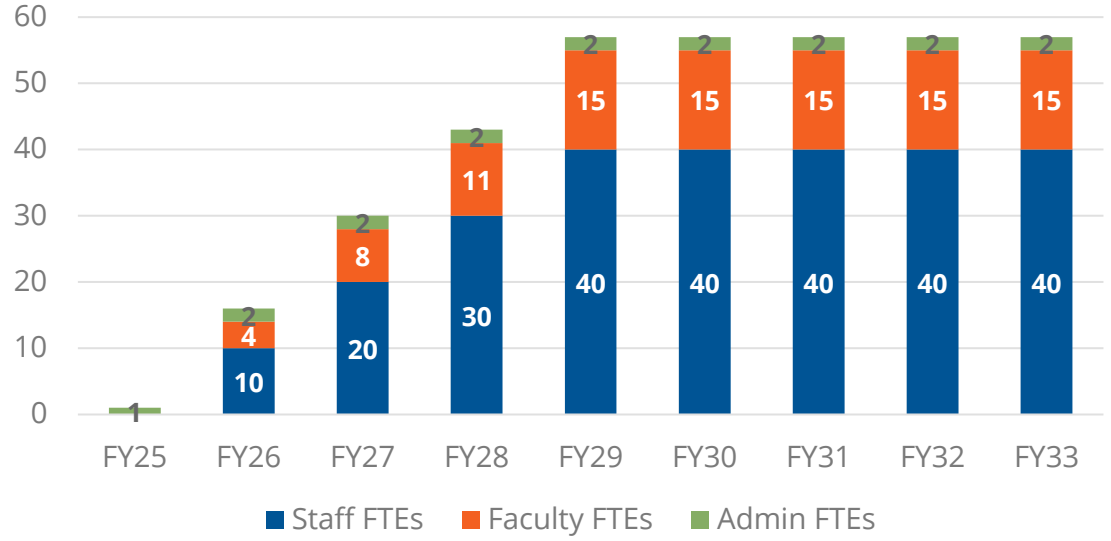
Sources: AAVMC Public Data; U.S. Bureau of Labor Statistics

Staffing and Enrollment Assumptions

Faculty and staff, beginning with the Founding Dean, will be added gradually to support operations and anticipated enrollments as the Veterinary School matures to steady state operations in FY2030 and beyond.

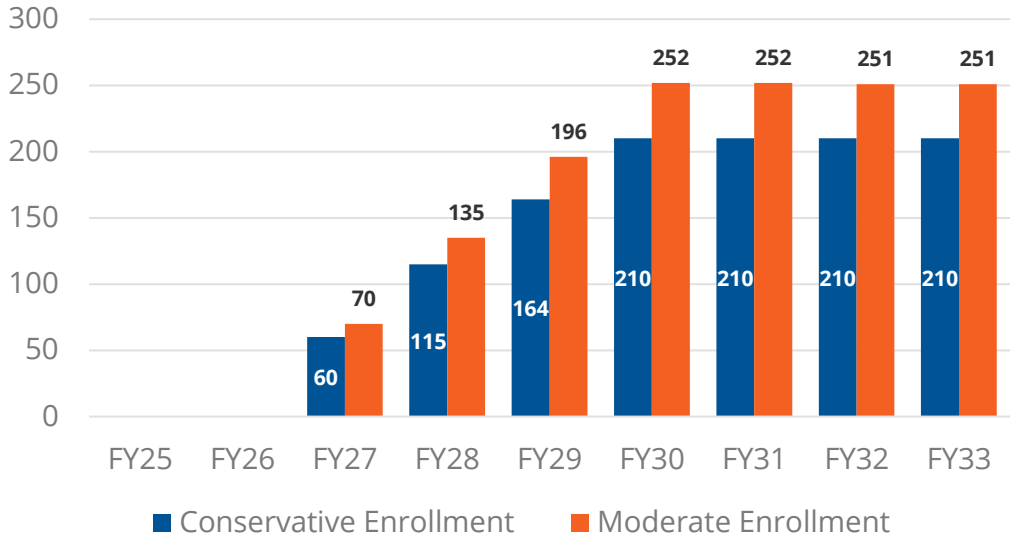
Faculty and Staff Ramp-up, FY26 – FY33[1]

- The Veterinary School Founding Academic Dean is hired and onboarded in FY25.
- Initial faculty are hired starting in FY26 and the required fifteen FTEs are in place by FY29. Per Murray State, an additional ten existing Faculty FTEs will support the Veterinary School.
- Staff includes Finance, IT, Academic Affairs, Research, Student Affairs, Professional Development, Clinical Affairs, and Clinical Education professionals.



Enrollment Ramp-up, FY26 – FY33[2]

- Assuming moderate enrollment, the first class begins in FY27 at 70 students, with total enrollment reaching 251 students at full capacity.
- Under the conservative model, the first class begins in FY27 at 60 students, with total enrollment reaching 210 students at full capacity.



Notes: 1) Total faculty and staff assumptions are calculated based on analysis of personnel headcounts at peers using the distributive model and account for existing faculty FTEs that Murray State has indicated will support the Veterinary School; 2) Enrollment at "steady-state" does not reach 280 as the model moderately assumes anticipated annual attrition of 7%, in line with the reported AAVMC enrollment data. Source: AAVMC Public Data.

Moderate Projection – Veterinary School Pro-forma Operating Results

The operating results[1] in the moderate projection represents the most likely scenario with many estimates provided directly by Murray State.

Income Statement - Moderate Scenario *$000s*	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Enrollment	-	-	70	135	196	252	251	251	252	252	252
Faculty FTEs	-	4	8	12	15	15	15	15	15	15	15
Staff FTEs	-	10	20	30	40	40	40	40	40	40	40
Administrator FTEs	1	2	2	2	2	2	2	2	2	2	2
Revenues:											
Tuition & Fees	$ -	$ -	$ 1,478	$ 2,966	$ 4,467	$ 10,742	$ 11,151	$ 11,600	$ 12,067	$ 12,553	$ 13,077
Total Operating Revenues	-	-	1,478	2,966	4,467	10,742	11,151	11,600	12,067	12,553	13,077
Operating Expenses:											
Faculty and Staff Salaries	215	1,397	2,412	3,468	4,424	4,513	4,603	4,695	4,789	4,885	4,982
Employee Benefits	-	629	1,086	1,560	1,991	2,031	2,071	2,113	2,155	2,198	2,242
Rotation Payments		-	-	-	-	676	689	703	717	726	746
Other Operating Expenses	250	2,197	2,603	3,637	3,710	3,784	3,860	3,937	4,016	4,096	4,178
Total Operating Expense	465	4,223	6,101	8,665	10,125	11,003	11,223	11,448	11,677	11,905	12,149
Operating Income	$ (465)	$ (4,223)	$ (4,623)	$ (5,699)	$ (5,658)	$ (262)	$ (72)	$ 152	$ 390	$ 648	$ 928
Operating Margin %	*N/A*	*N/A*	*-312.8%*	*-192.1%*	*-126.6%*	*-2.4%*	*-0.6%*	*1.3%*	*3.2%*	*5.2%*	*7.1%*
Non Operating Income:											
University/Private Funds	1,247	1,270	-	-	-	-	-	-	-	-	-
Total Non Operating Income:	$ 1,247	$ 1,270	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Surplus/(Deficit) -	$ 782	$ (2,952)	$ (4,623)	$ (5,699)	$ (5,658)	$ (262)	$ (72)	$ 152	$ 390	$ 648	$ 928
Net Surplus/(Deficit) %	*N/A*	*N/A*	*-312.8%*	*-192.1%*	*-126.6%*	*-2.4%*	*-0.6%*	*1.3%*	*3.2%*	*5.2%*	*7.1%*

Key Takeaways

- **Operating Income Driven by Tuition Revenues:** Revenues are driven by tuition and fees, which are projected to **reach $13M by FY35** as the Veterinary School operates at full enrollment capacity.
- **Largest Expenses Due to Faculty Salary/Benefits:** Murray State intends to leverage ten existing faculty in the program to limit the amount of net new investment needed. ~15 new faculty hires will drive $3.1M in annual expenses for the program in FY32.
- **Vet School Projected to Breakeven Under Current Assumptions:** At steady-state operations, under current assumptions, **the veterinary school is expected to breakeven** in FY32 and generate moderate surpluses thereafter. Under these assumptions, it will not require internal subsidization and/or state support to sustain its operations.

Note: 1) Assumptions detailed earlier in this section of the report on Slide 85.

Conservative Projection – Veterinary School Pro-forma Operating Results

The operating results[1] in the conservative projection represents the financial impact of a "worst case" scenario.

Income Statement - Conservative Scenario *$000s*	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Enrollment	-	-	60	115	164	210	210	210	210	210	210
Faculty FTEs	-	4	8	11	15	15	15	15	15	15	15
Staff FTEs	-	10	20	30	40	40	40	40	40	40	40
Adminstrator FTEs	1	2	2	2	2	2	2	2	2	2	2
Revenues:											
Tuition & Fees	$ -	$ -	$ 1,255	$ 2,468	$ 3,644	$ 8,648	$ 8,911	$ 9,183	$ 9,463	$ 9,751	$ 10,048
Total Operating Revenues	-	-	1,255	2,468	3,644	8,648	8,911	9,183	9,463	9,751	10,048
Operating Expenses:											
Faculty and Staff Salaries	247	1,555	2,681	3,711	4,967	5,116	5,269	5,427	5,590	5,758	5,930
Employee Benefits	111	700	1,206	1,670	2,235	2,302	2,371	2,442	2,515	2,591	2,669
Rotation Payments	-	-	-	-	-	624	643	662	682	702	723
Other Operating Expenses	250	2,197	2,603	3,637	3,746	3,859	3,975	4,094	4,217	4,343	4,474
Total Operating Expense	608	4,452	6,490	9,018	10,948	11,900	12,257	12,625	13,004	13,394	13,796
Operating Income	$ (608)	$ (4,452)	$ (5,236)	$ (6,550)	$ (7,304)	$ (3,253)	$ (3,346)	$ (3,443)	$ (3,541)	$ (3,643)	$ (3,748)
Operating Margin %	*N/A*	*N/A*	*-417.3%*	*-265.4%*	*-200.4%*	*-37.6%*	*-37.6%*	*-37.5%*	*-37.4%*	*-37.4%*	*-37.3%*
Non Operating Income:											
University/Private Funds	1,247	1,270	-	-	-	-	-	-	-	-	-
Total Non Operating Income:	$ 1,247	$ 1,270	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Net Surplus/(Deficit) -	$ 639	$ (3,182)	$ (5,236)	$ (6,550)	$ (7,304)	$ (3,253)	$ (3,346)	$ (3,443)	$ (3,541)	$ (3,643)	$ (3,748)
Net Surplus/(Deficit) %	*N/A*	*N/A*	*-417.3%*	*-265.4%*	*-200.4%*	*-37.6%*	*-37.6%*	*-37.5%*	*-37.4%*	*-37.4%*	*-37.3%*

Key Takeaways

The delta between moderate and conservative is driven by the following key assumptions:

1. Lower than expected enrollments driving lower tuition revenues: **$2.1M impact in FY30**
2. Higher than expected faculty salaries needed to attract and retain quality faculty: **$0.5M impact in FY30**

The conservative scenario also assumes expenses will grow at higher than historical rates (3% vs. 2% annually).

The resulting net surplus assumes all conservative assumptions are triggered.

Notes: 1) Assumptions detailed earlier in this section of the report on Slide 85. 2) Total operating expenses are lower under conservative projections because in this scenario, the CVM is projected to enroll fewer students, resulting in lower expenses from rotation payments, which are calculated based on enrollments in years 3 and 4 of the DVM program.

Potential CVM Benefits on Regional Economy

A veterinary school at Murray State would not just help to source a new, in-demand student population, but also provide a substantial economic benefit to the surrounding region.

A CVM may generate significant economic impact:

$85M One-Time **$46.3M** Annual Recurring **Economic Impact In Calloway County**

Based on estimated hiring needs (i.e., new jobs), a new CVM is estimated to generate $46.3M in economic output in Calloway County, including an estimated $16.8M in labor wages associated with 175 total jobs annually.

Capital projects planned in conjunction with the CVM launch are estimated to support a total of 777 jobs during the period of construction ($32.3M in labor income) and generate a total of $85.4M in economic output. (Note that current construction on new facilities will commence regardless of Murray State receives approval to launch the CVM.)

$107M One-Time **$19.1M** Annual Recurring **Economic Impact In Kentucky**

Based on estimated hiring needs (i.e., new jobs), a new CVM is estimated to generate $19.1M in economic output in Kentucky, including an estimated $8.1M in labor wages associated with 113 total jobs annually.

Capital projects planned in conjunction with the COM launch are estimated to support a total of 783 jobs during the period of construction ($45.9M in labor income) and generate an additional $107.4M in economic output. (Note that current construction on new facilities will commence regardless of Murray State receives approval to launch the CVM.)

A new college of veterinary medicine may also:

- **Expand access to veterinary medical care** to residents of the Murray region and Kentucky more broadly.
- **Expand veterinary education opportunities** for residents of western Kentucky and its surrounding region.
- **Produce new research** on animal health and welfare that benefits industry in the Commonwealth of Kentucky.

Sources: IMPLAN Model, 2022 Data Year, using inputs provided by Murray State and IMPLAN model data for the State of Kentucky and Calloway County

Student Demand

Overall Feasibility Assessment

Student Demand

G

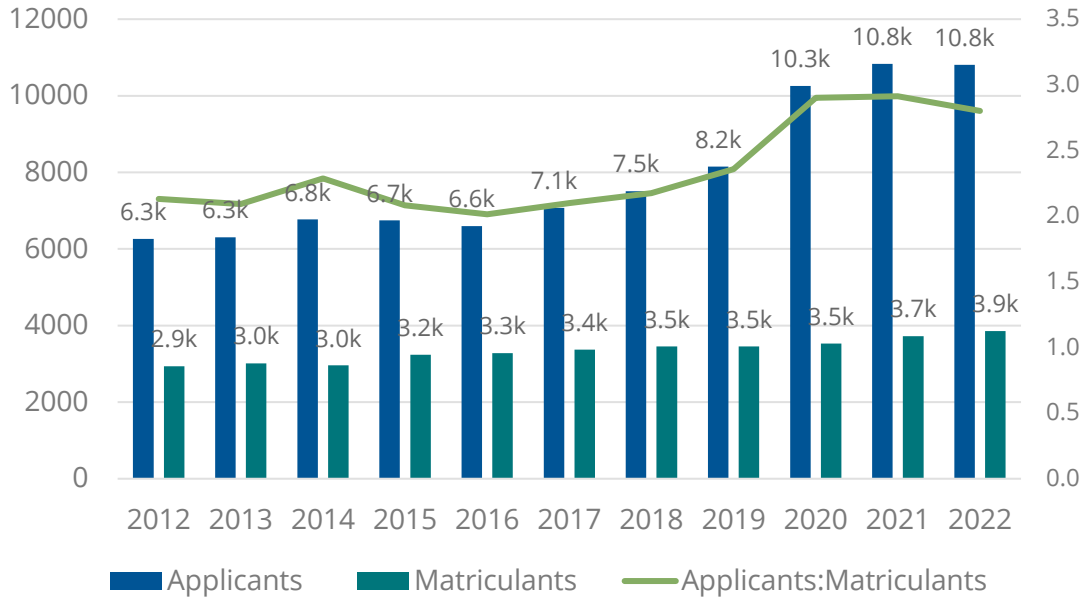
Student demand for seats in DVM programs is high, even amid growth in the program pipeline as new CVMs launch.

National & Regional Veterinary School Demand

Nationally, Student Demand for Seats in Veterinary School Outpacing Supply

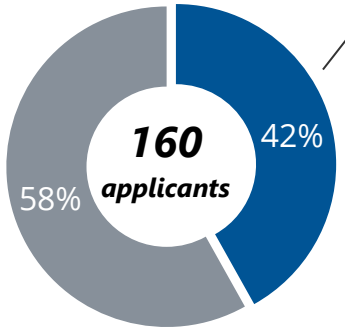
Over the last decade (2012-2022) the AAVMC reported a 72.6% rise in total applications to national veterinary colleges, while the number of US DVM first year seats has increased by 31.6%. In 2022, only 44% of applicants matriculated to U.S. Veterinary schools.

Total U.S. Veterinary Applicants and Matriculants



In Kentucky, Veterinary Medical School Demand Mirrors National Trends, with Large Applicant Pools for Small Number of Seats

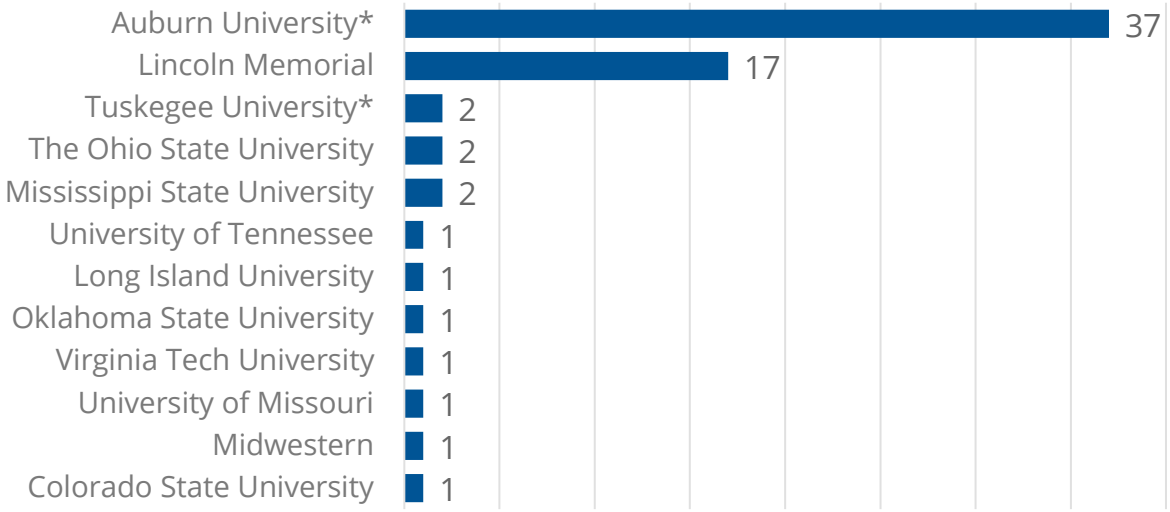
In 2023, 160 Kentucky residents applied to DVM Programs



67 matriculants to US DVM Programs
93 applicants who did not matriculate

Applicants-to-Matriculants
2.4-to-1

Accepted Kentucky Residents by Veterinary School



* Auburn and Tuskegee have an established agreement under Kentucky Veterinary Contract Spaces Program that hold seats for KY residents in their classes each year (38 at Auburn and 3 at Tuskegee)

Sources: AVMA Accredited Colleges; AAVMC Annual Report; AAVMC Admitted Student Profiles.

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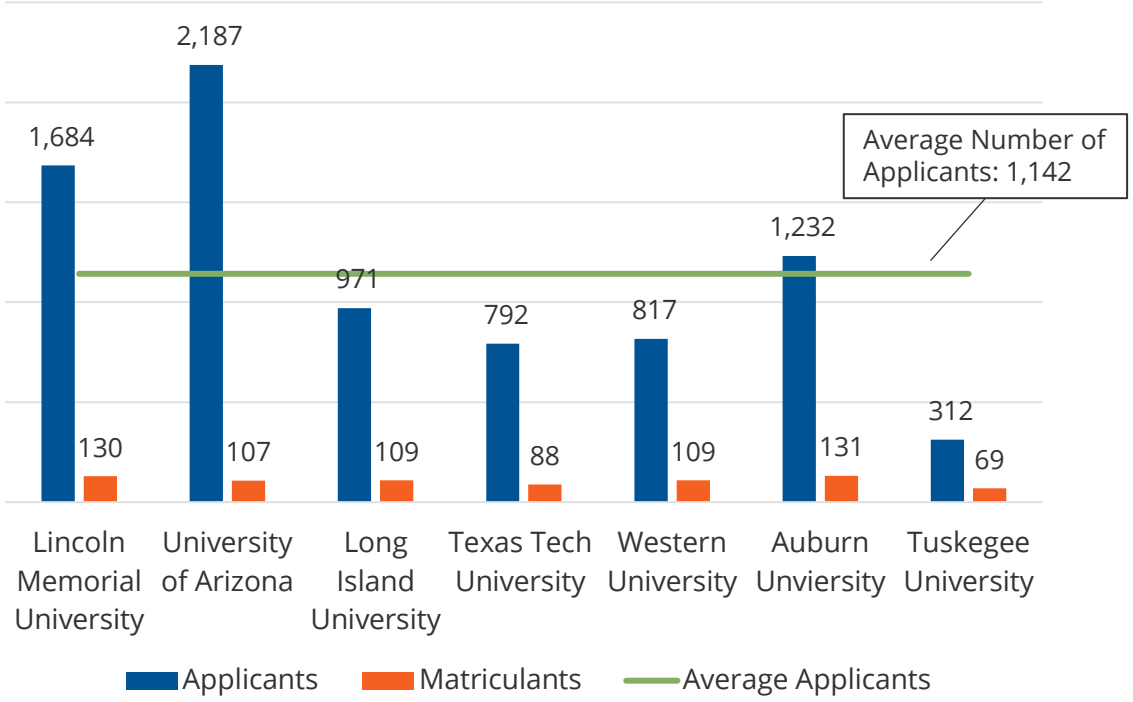
Select Peer Admissions Statistics

Peer Applicants and Matriculants

Among select peer veterinary education programs, the **average number of applicants exceeded 1,100 in 2023,** which is the most recently reported entering year**.** By comparison, average matriculants totaled less than 110 students.

Total Veterinary Applicants and Matriculants at Peer Institutions



Applicants & Matriculants at Recently Opened Vet Schools Using Distributive Model of Clinical Education

	First Year		*Latest Year (2023)*	
Institution	Applicants	Matriculants	Applicants	Matriculants
Lincoln Memorial University (TN) *Opened 2014*	367	96	1,684	130
University of Arizona (AZ) *Opened 2020*	518	110	2,187	107
Long Island University (NY) *Opened 2020*	450	107	971	109
Texas Tech University (TX) *Opened 2021*	617	64	792	88

Recently established veterinary schools are experiencing high application volumes relative to their class sizes, suggesting that, to this point, demand for seats in DVM programs continues to outpace supply.

The **average incoming GPAs for newer vet schools was 3.5** compared to **3.6 at established schools** in 2023, suggesting that recently established veterinary schools continue to enroll qualified applicant pools.

Sources: AVMA Accredited Colleges; AAVMC Annual Report; AAVMC Admitted Student Profiles.

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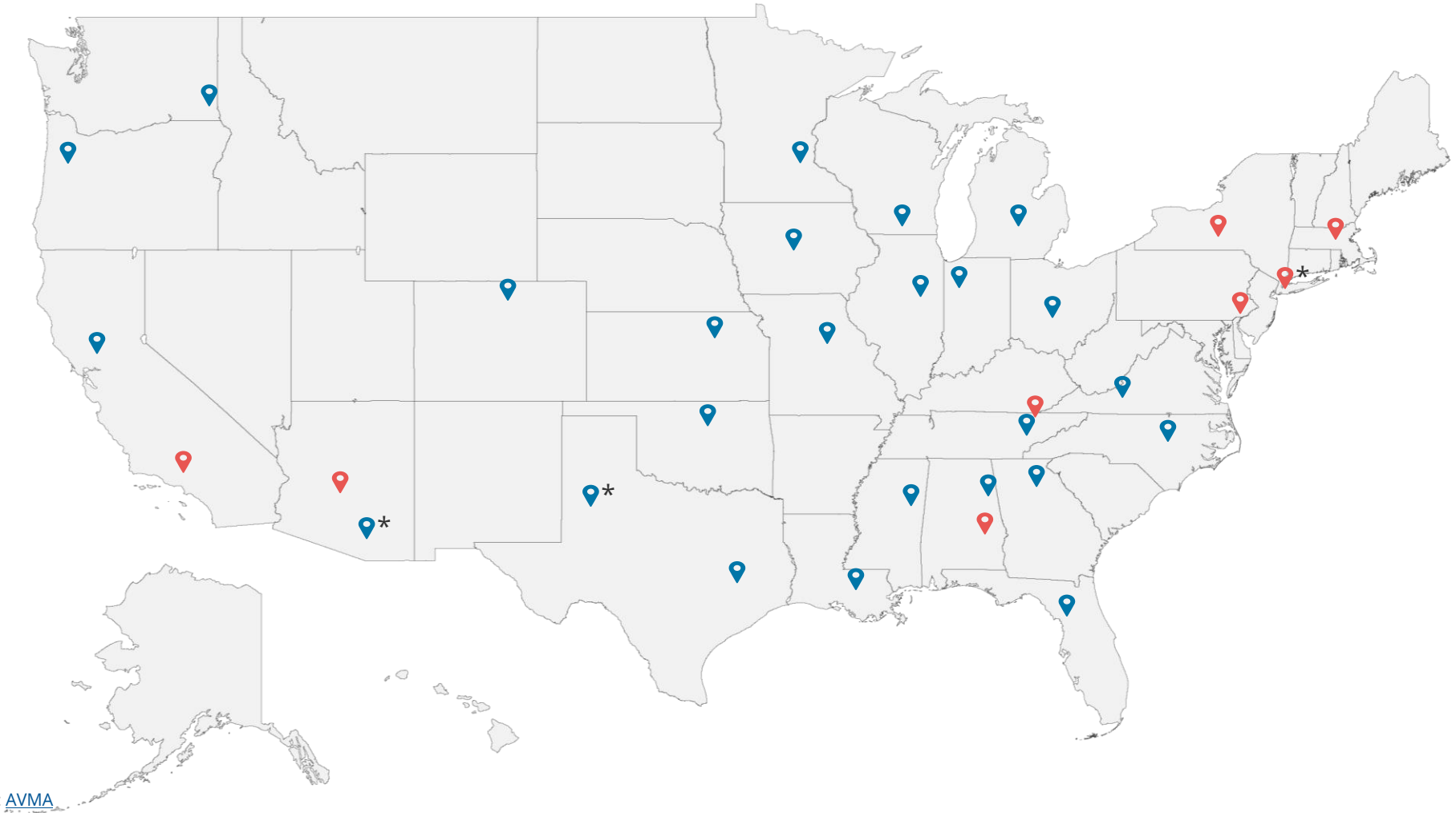
Landscape of Veterinary Schools

AVMA accredits 30 veterinary schools and three schools with provisional accreditation. There are currently fifteen additional veterinary schools in various stages of the development process.

Fully Accredited CVMs as of 2024



13,323

Veterinary students in the US as of 2019

Sources: AVMA

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Planned New DVM Programs and Seat Expansions | Timeline

Fifteen additional colleges of veterinary medicine are in various stages of development. Of those, three have already welcomed their inaugural classes and are working towards full accreditation.

***** Using or planning to use Distributive Model of Clinical Education

2020

- **University of Arizona* (AZ):** Pre-Accredited
- **Long Island University* (NY):** Pre-Accredited

2021

- **Texas Tech University* (TX):** Pre-Accredited

2024

- *25 seats from university expansions*

2025

- **Lyon College* (AR)**
- **Lincoln Memorial University – Orange Park Campus* (FL)**
- **Rowan University (NJ)**
- **Utah State University* (UT)**
- *152 seats from university expansions*

2026

- **Arkansas State University (AR)**
- **Chamberlin University (GA)**
- **Clemson University* (SC)**
- **University of Maryland Eastern Shore (MD)**
- **Rocky Vista College (MT)**
- *20 seats from university expansions*

2027

- **Hanover College* (IN)**
- **Midwestern University (IL)**
- *10 seats from university expansions*

2028

- *10 seats from university expansions*

The accreditation of all fifteen colleges will result in a **45% increase in DVM Programs in the U.S.**
Based on proposed class sizes, by 2028, there will be an **additional 1,500 first-year seats** derived from both new programs and expansion of existing programs.

Sources: A proliferation of newly proposed veterinary colleges | American Veterinary Medical Association; Demand for and Supply of Veterinarians in the U.S. to 2032.

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KY Contract Spaces Program at Auburn and Tuskegee

KY currently funds seats for a select number of KY residents at two DVM programs, which allows students to pay in-state tuition rates. The cost of these programs to students, coupled with their history of serving the KY veterinary workforce, **position these programs as strong competitors with Murray State for Kentucky-resident DVM students**, if the contract spaces program continues to receive funding.

Contract Spaces Program Overview

The most recent Executive Branch budget bill (HB 200, 2018) funds 164 spaces at **Auburn University College of Veterinary Medicine** and **Tuskegee University College of Veterinary Medicine:**

- 152 total seats at Auburn, 38 first-year seats
- 12 total seats at Tuskegee, 3 first-year seats

Other Auburn Vet Commitments to KY

Auburn participates in the USDA-NIFA Veterinary Service Grant Program (VSGP), which helps place graduates from the CVM in rural Kentucky[1] :

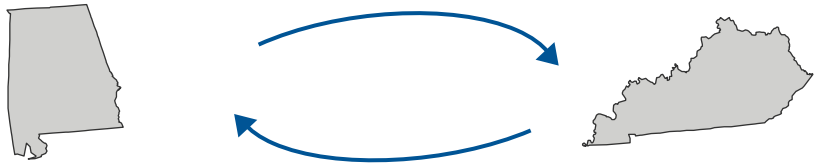
- Grant designed to recruit and advance students interested in rural service
- Offers internships/preceptorships and matches students with rural practices
- Of the 20 identified students participating in the partnership, 19 have entered rural practice after graduating

By the Numbers

130 Kentucky applicants for 38 seats at Auburn CVM in 2023

$5.3M Cost to Commonwealth in 2024 to fund KY students at Auburn and Tuskegee

67% of KY residents with Auburn University Vet degrees returned to KY



Notes: 1) Both Auburn and Tuskegee participate in this program, but data is only available from Auburn. Sources: Grant Strengthens Veterinary Medicine in Rural Kentucky – Auburn Veterinarian – Auburn University | College of Veterinary Medicine; Report of the Veterinary Medicine Contract Spaces Working Group to Interim Joint Committee on Appropriations and Revenue; KHEAA Report on Optometry Scholarship & Veterinary Contract Spaces 2024; Peer Benchmarking Interviews.

Murray State Differentiating Factors

While the market for veterinary students is increasingly competitive due to new program entrants, the following differentiating factors may help Murray State compete for students over competitor programs.

- Murray State's CVM would be the first offering in the Commonwealth. Kentucky residents can currently receive in-state tuition rates at Auburn and Tuskegee through the contract spaces program, minimizing the relative competitive advantage of offering in-state tuition. However, the College's location in western Kentucky may be appealing to some applicants who wish to stay close to home for further education.

- Murray State University currently offers a range of programs that highlight their expertise in animal science, including Veterinary Technology, Pre-Veterinary Medicine, and Animal/Equine Science. These programs could serve as a pipeline to the veterinary school and increase Murray's credibility in veterinary medicine for potential applicants.

- Because Murray State is rurally located, they may be positioned to attract rural Kentucky students and establish partnerships with rural clinics.

Workforce Alignment

Overall Feasibility Assessment

Workforce Alignment

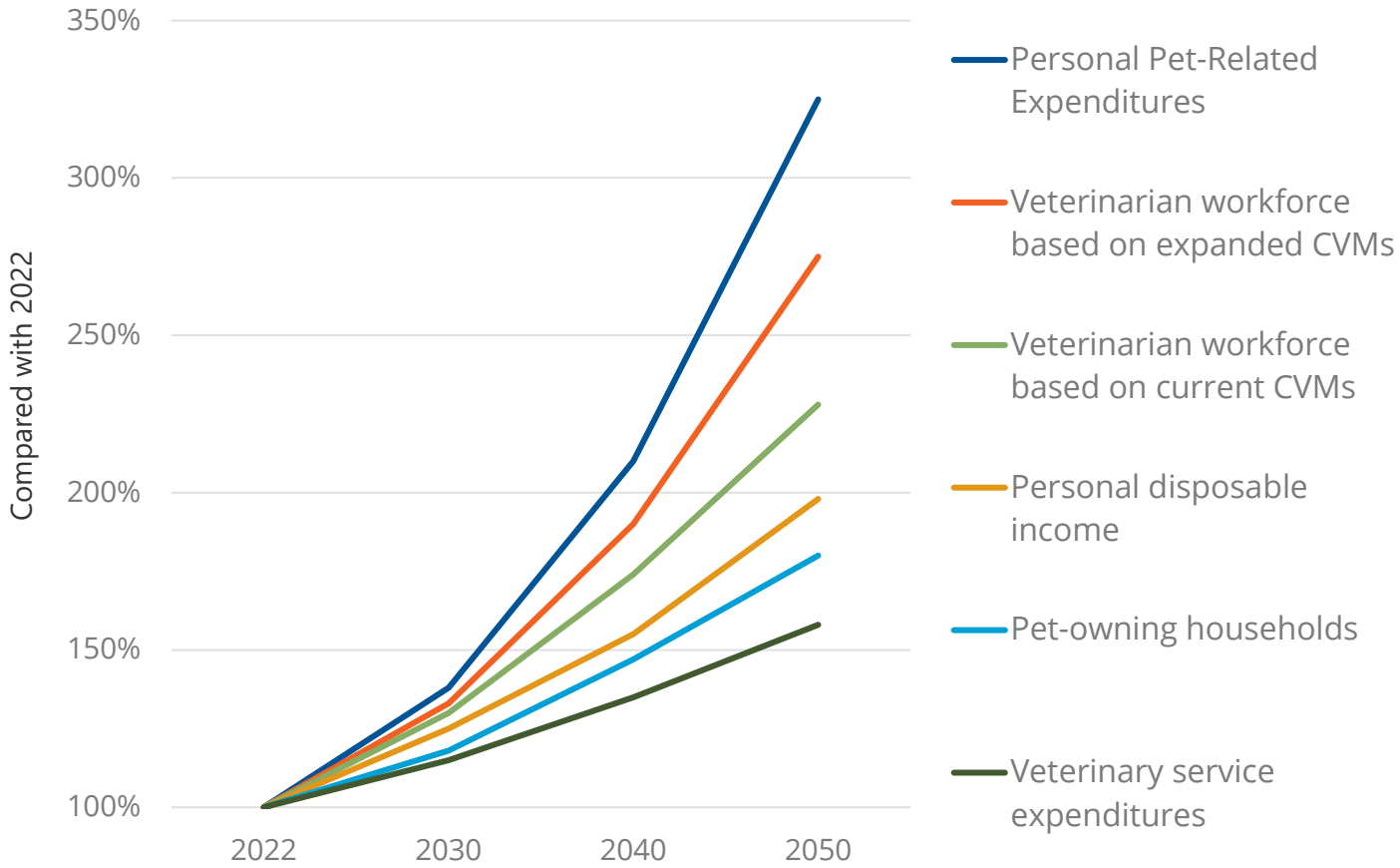
Y

Industry experts disagree about the demand for new veterinarians at the national level, though there is an undisputed shortage of rural large animal vets in KY. Some experts purport that a CVM cannot meaningfully address the rural shortage, though Murray has a record of successfully placing graduates in rural settings.

National Demand for Veterinarians

Recently released data study commissioned by the American Veterinary Medical Association (AVMA) does not forecast a national shortage of veterinarians.

Brakke Consulting's Analysis of the Veterinary Workforce
Projected Growth of Supply & Demand Factors (Fall 2024)



Key Takeaways from Brakke Consulting's Veterinary Workforce Forecast Project

- The report indicates that **the current supply of veterinary school graduates is sufficient to meet workforce demand** through 2035.
- Accounting for new CVMs in planning stages and some established CVMs planning to grow their class sizes, if all 13 proposed veterinary schools are accredited, the **veterinary workforce could increase by nearly 40%** in a decade.
- Beyond 2035, the **number of veterinarians may exceed demand**, potentially risking the economic health of the profession unless there is a significant increase in the utilization of veterinary services.

Sources: AVMA - No Dire Shortage of Veterinarians Anticipated in Coming Years Report, AVMA - Straight Talk About Veterinary Workforce Issues, AVMA - Chart of the Month: No Dire Shortage of Veterinarians Needed.

Shortage of Veterinarians in Rural Areas

Although the national supply of veterinarians is expected to meet overall demand until 2035 and exceed it thereafter, rural areas, including much of Kentucky, are currently experiencing veterinarian shortages.

Rural Veterinary Shortage Areas Currently Observed Across Most of the US

In 2023, the National Institute of Food and Agriculture (NIFA) designated **237 rural veterinary shortage areas** across **47 states** in the US, including Kentucky.

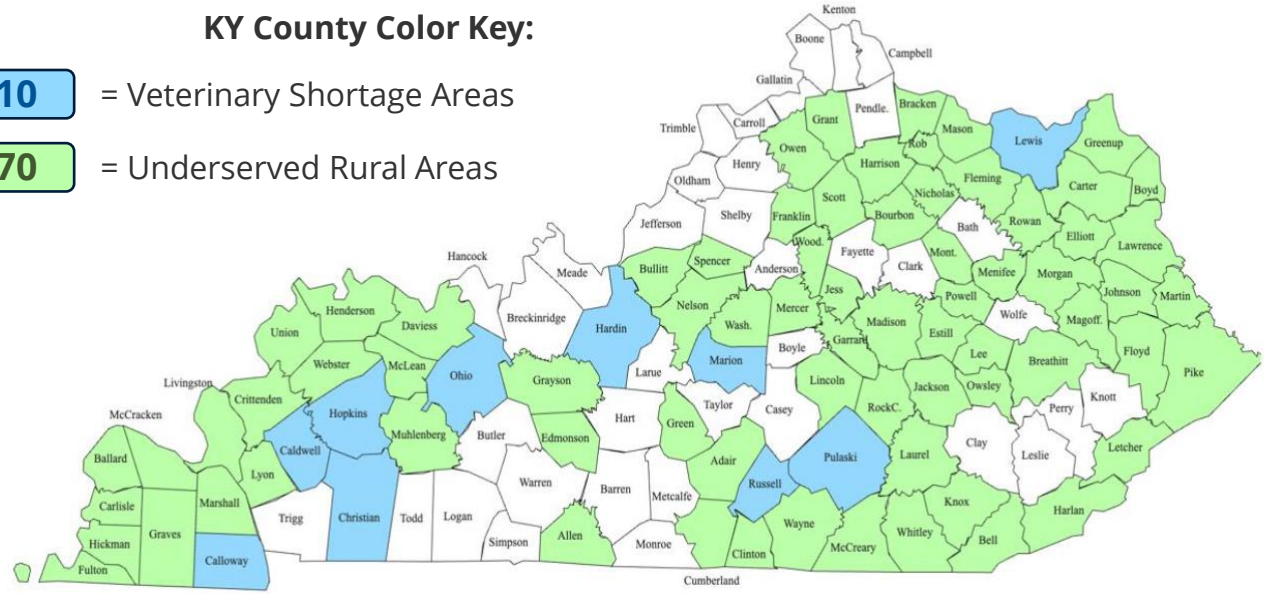
- In 2023, the AVMA reported that only 19.5% of veterinarians practice in rural areas
- Among veterinarians working in suburban areas, only 5% would prefer to work in a rural area
- Among veterinarians working in urban areas, 8.1% would prefer to work in a rural area
- 87% of veterinarians currently working in rural areas prefer to remain there, indicating a strong preference for their rural location

Veterinary Shortage and Underserved Rural Areas in Kentucky

KY County Color Key:

10 = Veterinary Shortage Areas

70 = Underserved Rural Areas



Note: **Veterinary shortage service area** are defined through implementation of a shortage nomination process, where nominations are reviewed by an external panel of veterinary experts and provided a designation.
Underserved rural area means an area of Kentucky, as designated by the KY State Veterinarian, with a low ratio of practicing veterinarians to livestock in a city with a population of less than twenty-five thousand (25,000) and more than twenty (20) miles from a city with a population of more than fifty thousand (50,000).

Sources: AVMA Report, AVMA Press Release, AVMA. KHEEA KRVLRP, USDA-NIFA VSGP, VMLRP, VMLRP FAQ , AVMA Report on the Economic State of the Veterinary Profession (2024).

Shortage of Veterinarians in Rural Areas, Continued

Veterinary experts believe that a lack of incentives for students to go into large animal care in rural areas—not a lack of veterinary students—is the greatest contributor to the rural veterinarian shortages in Kentucky and nationally.

Characteristics of the DVM student population driving them towards companion animal practices in suburban and urban environments:

Majority of Students from Urban/Suburban Areas

According to the AVMA, ~80% of all incoming veterinary students, on average, come from urban or suburban areas and intend to seek employment in urban or rural locations.

High Student Debt Levels Among Many DVM Graduates

According to the AVMA, median salaries for associates in companion animal predominant and exclusive practices are $110k and $125k, respectively, compared to $91k in food animal and $95k in mixed animal practices. Higher-paying fields may be particularly attractive to new DVM graduates, as the average debt for new DVM graduates in 2023 was $154,451.

76% of surveyed Kentucky veterinarians do not believe that the current lack of an in-state veterinary school is contributing to the rural veterinary shortage.

Sources: KVMA Membership Survey regarding a proposed KY Veterinary School; AVMA Report on the Economic State of the Veterinary Profession (2024); 2019-Admissions-Analysis-Monograph.pdf.

Faculty Recruitment

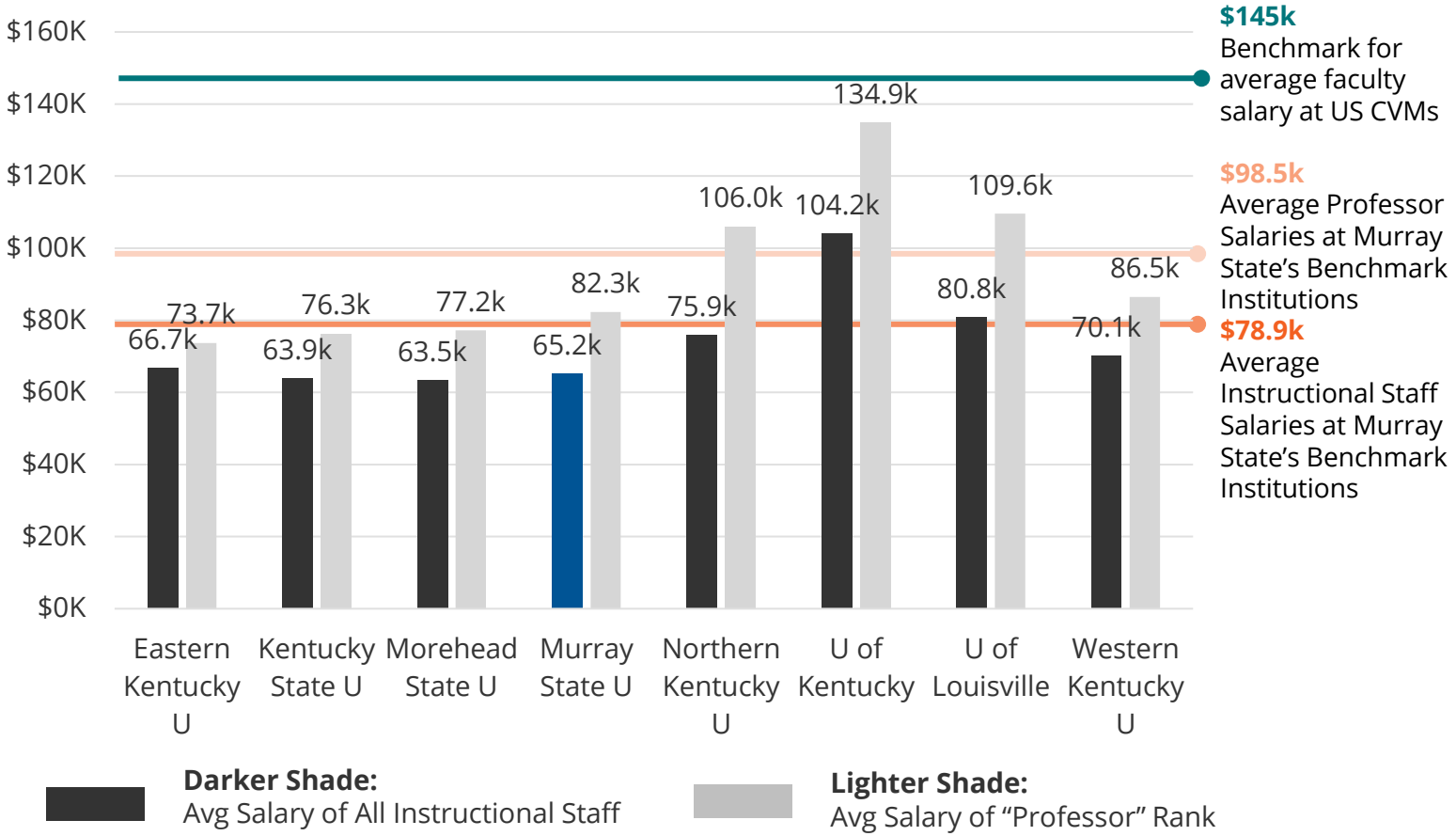
Overall Feasibility Assessment

Faculty Recruitment 	Y	There is presently a shortage of veterinary faculty in the US, which is positioned to worsen as planned new vet schools launch in the next decade. Murray State has several existing veterinary faculty on staff who can teach in this program, mitigating the risk.

Murray State Faculty Recruitment Considerations

Murray State's average instructional salaries in AY2022-23 were on the lower end of Kentucky peers and considerably lower than benchmark peers. The proposed veterinary medicine faculty range is $121,000 – $161,000, well above averages for both sets of peers.

Average Salaries of Full-Time Instructional Nonmedical Staff equated to 9-Months Worked, by Academic Rank: Academic Year 2022-23[1]



Key Takeaways

- **Murray State's average professor salaries are in the top half of Kentucky regional comprehensives,** while their average instructional salaries are lower than most of their KY peers and lower than eighteen of the nineteen identified peer benchmark institutions.
- **Murray State's proposed CVM faculty salaries range is aligned with industry averages.** Murray State is planning to offer CVM faculty salaries in the range of **$121k-$161k.** In comparison, the average US CVM faculty salary is $145k.
- **Murray State CVM's founding dean may be among the highest paid faculty or staff member at the institution**, based on peer analysis.

Notes: 1) Reflects IPEDS "All instructional staff total of Average salaries of full-time instructional nonmedical staff equated to 9-months worked, by academic rank : Academic year 2022-23;" 2) See Appendix for full list of Murray State Benchmark Peers. Sources: IPEDS Data Center; Murray State Benchmark Institutions, AVMA Report on the Economic State of the Veterinary Profession (2024), peer interviews

Veterinary Medicine Faculty Hiring Market Overview

The American Association of Veterinary Medical Colleges (AAVMC) reports a current shortage of veterinary faculty, which creates a risk that Murray State may struggle to recruit sufficient faculty at new Colleges of Veterinary Medicine.

AAVMC Data on National Veterinary Faculty Shortage

474 Funded & Unfilled Veterinary Medicine Faculty Positions in 2023

10% of all positions in the current veterinary faculty workforce are unfilled

1,000 Funded & Unfilled Veterinary Faculty Positions Projected by 2030

Murray State CVM Faculty Hiring Projections

25 Estimated faculty FTEs needed to run CVM using distributive clinical education mode at proposed student enrollment levels

10 Current Murray State faculty expected to teach in vet school

15 Expected CVM hiring needs in first four years of the program

Due to the national shortage of veterinary faculty, Murray State University may struggle to attract candidates. This challenge is compounded the **nascency of the program**, making it difficult to compete with the high-paying private sector and more established peer institutions. Although some local veterinarians have shown interest in teaching and providing rotational sites, no formal agreements have been made.

Sources: AAVMC Faculty Shortage Overview, AVMA Report on the Economic State of the Veterinary Profession (2024), peer interviews

Accreditation Standards

Accreditation Standards

Y

To meet accreditation standards, Murray State will need to invest significantly to provide sufficient facilities for the housing of animals used in teaching and research, to satisfactorily produce substantial related research, and to ensure quality of education and facilities at distributed clinical sites.

MURRAY STATE | COLLEGE OF VETERINARY MEDICINE

Accreditation Standards | Overview

The American Veterinary Medical Association Council on Education (AVMA COE) sets forth eleven standards, including 78 individual elements, for the accreditation of new colleges of veterinary medicine to ensure high-quality education and training for veterinary students.[1]

1. Organization
2. Finances
3. Physical Facilities and Equipment
4. Clinical Resources
5. Information Resources
6. Students
7. Admission
8. Faculty
9. Curriculum
10. Research Programs
11. Outcomes Assessment

Note: 1) In addition to AVMA COE accreditation standards, Murray State will also need to comply with all applicable SACSCOC accreditation processes, including those for Substantive Changes. Source: AVMA Accreditation Standards

Accreditation Standards | Key Challenges and Risks (1 of 2)

Of the eleven AVMA COE accreditation standards, the following six represent the most significant and challenging for Murray State.

Standard	Requirement	Risk
2 Finances	- Financial stability to sustain educational programs.	- A new CVM will require significant startup and recurring operating funding. Operating expenses at steady state are estimated in the range of $11.0M - $12.1M per year.
3 Physical Facilities and Equipment	- Facilities for the housing of animals used for teaching and research shall be sufficient in number, properly constructed, and maintained in a manner consistent with accepted animal welfare standards. - Off-campus required training sites must be directly (in-person) and regularly (no less than annually) inspected and overseen by qualified college personnel to provide a safe and effective learning environment.	- Murray State is currently not planning to build new facilities to house the vet school. Instead, they are planning the construction of a new Veterinary Sciences building that will serve the needs of future veterinary students as well as students in their pre-vet and vet tech programs, which they have already secured funding for from the legislature. Murray State plans to commence this construction project independent of the vet school. - Deans of peer veterinary programs using a distributive model of clinical education expressed concerns that Murray State was not fully appreciating and planning for the full range of facilities needs to successfully operate a CVM, noting that curricular and compliance needs for a DVM program are distinct from animal sciences programs.
4 Clinical Resources	- Adequate clinical resources, including availability of diverse animals and variety of patients. - Supervision of all clinical sites, whether on-campus or off-campus.	- Distributive model introduces potential variance in the clinical experiences of students. - Ensuring all clinical partners meet the required standards for educational quality and safety requires dedicated resources, robust communication and coordination. Peer programs using distributive models of clinical education staff ~5 FTEs to administer clinical education programs.

Sources: AVMA Accreditation Standards, peer benchmarking interviews

Accreditation Standards | Key Challenges and Risks (2 of 2)

Of the eleven AVMA COE accreditation standards, the following six represent the most significant and challenging for Murray State.

Standard	Requirement	Risk
8 Faculty	- Sufficient qualified faculty and qualified to deliver the educational program. - Participation in scholarly activities is important for faculty evaluation.	- The national shortage of veterinary faculty creates a highly competitive environment for faculty recruitment, and as a rural institution with a nascent DVM program, Murray State stands to face challenges competing for faculty talent. Murray State is also not currently budgeting for faculty start-up packages, which stands to exacerbate these faculty recruitment issues.
10 Research Programs	- Maintain substantial high-quality research integrated with the professional program.	- Ensuring high-quality research activities and their integration with the professional program requires significant resources and support, including startup packages for research faculty, which peer program leadership estimated at $300k-400k per research faculty FTE. The AVMA COE (accrediting body) recently issued a major deficiency to another distributive model DVM program at a university without high research activity (i.e., not an R1 or R2), illustrating the challenges that universities may face when meeting the AVMA's accreditation standards in the research domain.
11 Outcomes Assessment	- Minimum of 80% NAVLE[1] pass rate by graduates within the first two years.	- Growing competition for DVM students as new CVMs launch and establish CVMs grow their student populations introduce risk that Murray may need to recruit less qualified applicants to fill their classes who may not be prepared to take licensing exams.

Note: 1) The North American Veterinary Licensing Examination (NAVLE), is a requirement for licensure to practice veterinary medicine in all licensing jurisdictions in the US and Canada. Sources: AVMA Accreditation Standards, NAVLE, peer benchmarking interviews

Clinical Placements

Clinical Placements

Y

In a KVMA survey, over 170 veterinarians across KY expressed interest in supporting clinical education for Murray State students, though a distributive clinical education model requires an expansive partner network, and Murray State may need to look out of state to fulfill its needs, particularly for veterinary specialties.

DVM Distributive Model of Clinical Education Operating Requirements

Murray State's proposed model of clinical education will require an extensive partner network as well as investments in faculty and staff, technology, and payments to clinical partners.

In a **distributive model of veterinary education**, students gain hands-on clinical experience at various off-campus clinical sites rather than at an on-campus teaching hospital.

These clinical sites include private practices, urgent care clinics, emergency clinics, referral hospitals, shelters, zoos, and wildlife rehabilitation centers.

Factors Driving Cost and Complexity in Distributive Models

Breadth of Clinical Partner Network

Peer institutions partner with 130-600 hospitals, clinics, and other facilities across the US for clinical education. Adjusting for Murray State's targeted enrollment, they may need **>200 partners** at steady state and will likely need to engage partners outside the Southeast.

FTEs Required to Run Program

Peer programs employ an average of **five FTEs** to administer their clinical education program, including an associate dean of clinical relations.

Other Costs to Administer Placements

Murray State anticipates needing to pay **$12k** per year per student to clinical partners to educate students, which is materially aligned with peer estimates. New technology systems are also needed to administer clinical schedules.

⚠ While the cost of administering a distributive model of clinical education is lower than a traditional model with a teaching hospital, **the complexity and risk are higher**. Murray State will need to develop an extensive network of partners and invest in faculty and staff to administer the program and ensure that students consistently receive high-quality training.

Source: Peer benchmarking interviews.

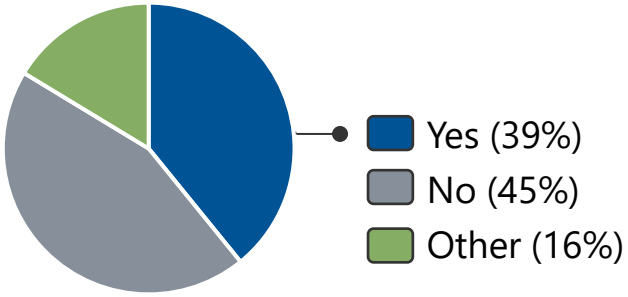
MURRAY STATE | COLLEGE OF VETERINARY MEDICINE

Regional Clinical Capacity

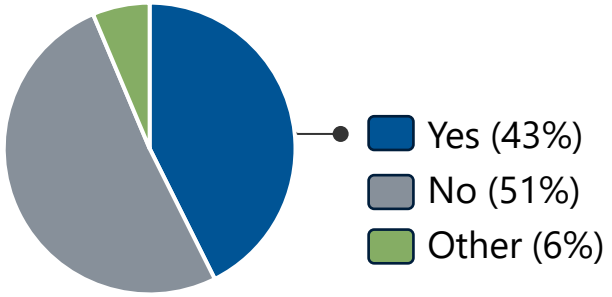
The Kentucky Veterinary Medical Association (KVMA) recently conducted a survey of its members that assessed their capacity for providing clinical education to new veterinary students in a distributive model. Relevant results are summarized across the next two slides.

KVMA Membership Survey: Interest in Clinical Site Service and Quality Education Capacity

If your practice met the…requirements to be a clinical education site for a new veterinary school in KY, would you be interested in participating?



Given your current workload, do you feel you could provide a quality educational experience [to students]…during their clinical rotations?



n=449 out of an estimated 1,600 vets licensed in Kentucky

- **188** respondents indicated capacity to provide clinical education, though only **178** respondents indicated an interest in providing clinical education to students in a distributive model. Interest in hosting students does not guarantee that clinics will meet AVMA Council of Education requirements to serve as a clinical education site.
- Projecting the survey results across the broader population of veterinarians in KY suggests that Murray State will see robust interest in partnership across the Commonwealth, which will help them meet clinical education needs, which could require >200 partners.
- KVMA data does not specify what types of clinical education each respondent clinician can provide. Peer interviews suggest that Murray State may need to look outside the Commonwealth to identify partners for some required clinical courses where clinical partner capacity is limited.

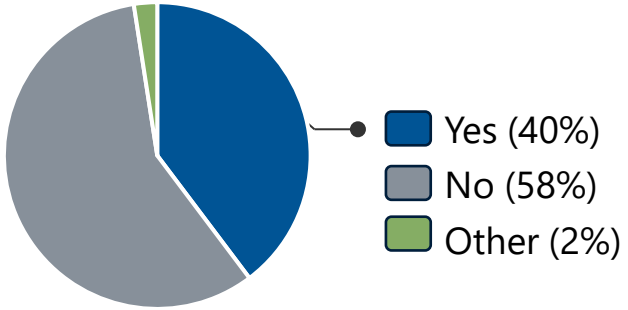
Source: KVMA Membership Survey regarding a proposed KY Veterinary School.

Regional Clinical Capacity, Continued

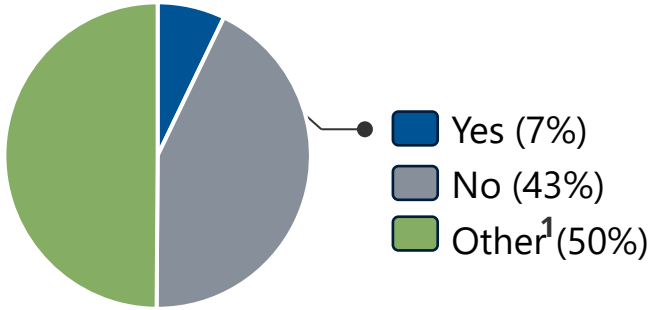
The Kentucky Veterinary Medical Association recently conducted a survey of its members that assessed their capacity for providing clinical education to new veterinary students in a distributive model. Relevant results are summarized below and on the prior slide.

KVMA Membership Survey: Prior Experience and Perceptions of Distributive Model Schools

Have you directly participated as a clinical site for distributive model schools?



If you have participated as a clinical site…, do you feel a distributive model school provides the same level of education or better than…students currently receive through [the] contract spaces?



n=449 out of an estimated 1,600 vets licensed in Kentucky

- 175 respondents indicated that they have directly participated in the clinical education of veterinary medical students in a distributive model of clinical education. Of those, **only 7%, or 32 respondents**, believe that the distributive model of clinical education provides the same (or better) quality of clinical education as a traditional model (in this survey, the education at Auburn and Tuskegee in particular).
- While some survey respondents may be biased as graduates of Auburn or Tuskegee (this was not controlled for in the survey**), the quality concerns expressed by many survey respondents poses a risk to Murray State's ability to secure clinical placements**. They will need to change perceptions among the KY veterinarian community to effectively secure and maintain clinical sites for their students.

Note: 1) "Other" captures the responses of veterinarians that have not participated as a clinical site for students in a distributive model. Source: KVMA Membership Survey regarding a proposed KY Veterinary School.

Appendix

Appendix | Murray State University

Murray State Campus Visit

On 10/02/24, the project team visited the Murray State University campus and met with the following stakeholders.

Meeting Time (EST)	**Participants**
9:00 AM – 12:00 PM	• Bob Jackson – President • Brian Parr – Dean, Hutson School of Agriculture • Tim Todd – Provost and VP for Academic Affairs • Jackie Dudley – Vice President for Financial Services • Jordan Smith – Assistant Vice President for Public Affairs • Richard Heath – KY House of Representatives • Robert Miller – General Counsel • Bob Pervine – Associate Provost, Hutson School of Agriculture • Jason Howell – KY Senate • Danny Carroll – KY Senate • Renee Fister – Associate Provost

Murray State External Stakeholders

The project team conducted interviews with leaders from Veterinary Medicine colleges and schools.

Stakeholder Group	Meeting Participants
Kentucky Veterinary Medical Association (KVMA)	Dr. Wade King, President
Lincoln Memorial University (LMU)	Dr. Stacy Anderson, Executive Dean, College of Veterinary Medicine
Auburn University	Dr. Calvin Johnson, Dean, College of Veterinary Medicine
University of Maryland Eastern Shore (UMES)	Dr. Stanley Robertson, School of Veterinary Medicine
Texas Tech University	Dr. Guy Loneragan, Dean, School of Veterinary Medicine

Murray State Composite Financial Index (CFI) Calculation

Murray State's CFI is calculated using the methodology outlined for public institutions by the Higher Learning Commission.

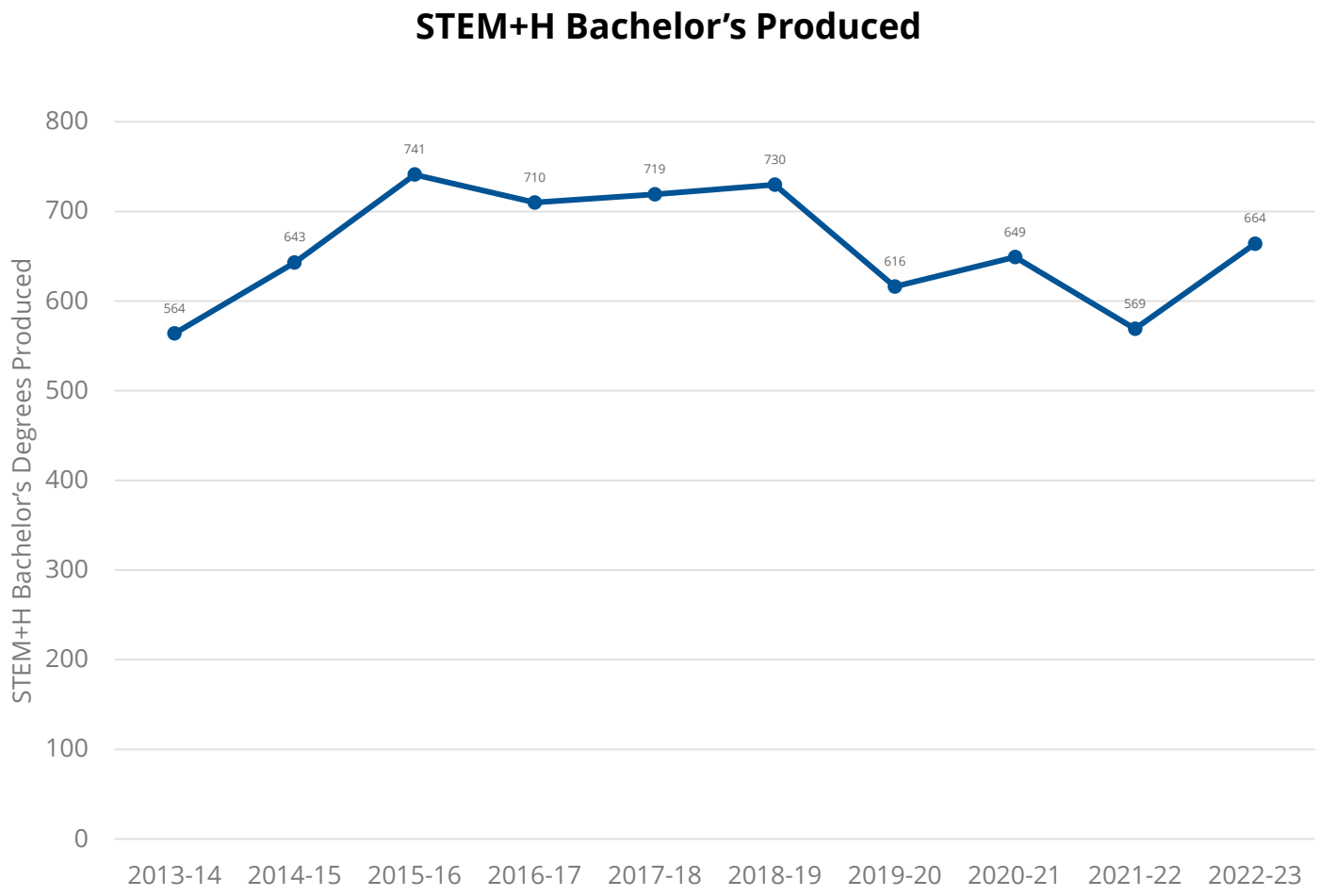
PUBLIC

Primary Reserve	Strength = ratio / .133 Strength = 10 if > 10 Strength = -4 if < -4 Weight = .35 cfi = strength * weight
Net Operating Revenue	Strength = ratio /.013 Strength = 10 if > 10 Strength = -4 if < -4 Weight = .10 cfi = strength * weight
Return on Net Assets	Strength = ratio /.02 Strength = 10 if > 10 Strength = -4 if < -4 Weight = .20 ratio = strength * weight
Viability	Strength = 10 if denominator = 0 Strength = ratio /.417 Strength = 10 if > 10 Strength = -4 if < -4 Weight = .35 cfi = strength * weight

Financial Ratios					
Primary Reserve Ratio Calculation:		**Data**	**Strength**	**Weight**	**CFI**
Institution unrestricted net assets	+	127,265,028.0			
Institution expendable restricted net assets	+	18,378,604.0			
C.U. unrestricted net assets	+	27,824,589.0			
C.U. temporary restricted net assets	+	104,582,688.0			
C.U. net investment in plant	-	6,166,398.0			
Numerator Total		271,884,511.0			
Institution operating expenses	+	191,770,742.0			
Institution non-operating expenses	+	4,299,438.0			
C.U. total expenses	+	179,673,536.0			
Denominator Total		375,743,716.0			
Primary Reserve Ratio =	÷	**0.72**	**5.44**	**0.35**	**1.90**
Net Operating Revenue Ratio Calculation:					
Institution operating income (loss)	+	(95,589,577.0)			
Institution net non-operating revenues	+	88,466,023.0			
C.U. change in unrestricted net assets	+	4,135,265.0			
Numerator Total		(2,988,289.0)			
Institution operating revenues	+	96,181,165.0			
Institution non-operating revenues	+	92,765,461.0			
C.U. total unrestricted revenues	+	11,069,677.0			
Denominator Total		200,016,303.0			
Net Operating Revenue Ratio =	÷	**-0.01**	**-1.15**	**0.10**	**-0.11**
Return on Net Assets Ratio Calculation:					
Change in net assets + C.U. change in net assets		24,869,842.0			
Total net assets + C.U. total net assets (beginning of year)		290,310,231.0			
Return on Net Assets Ratio =	÷	**0.09**	**4.28**	**0.20**	**0.86**
Viability Ratio Calculation:					
Expendable net assets **Numerator Total =**		271,884,511.0			
Institution long-term debt (total project related debt)	+	63,884,673.0			
C.U. long-term debt (total project related debt)	+	6,000,063.0			
Denominator Total		69,884,736.0			
Viability Ratio =	÷	**3.89**	**9.33**	**0.35**	**3.27**
COMPOSITE FINANCIAL INDICATOR SCORE (CFI)					**5.91**

Sources: Murray State Audited Financial Statements; Higher Learning Commission CFI Worksheet

Current State Performance on the Comprehensive Funding Model



18% Murray State

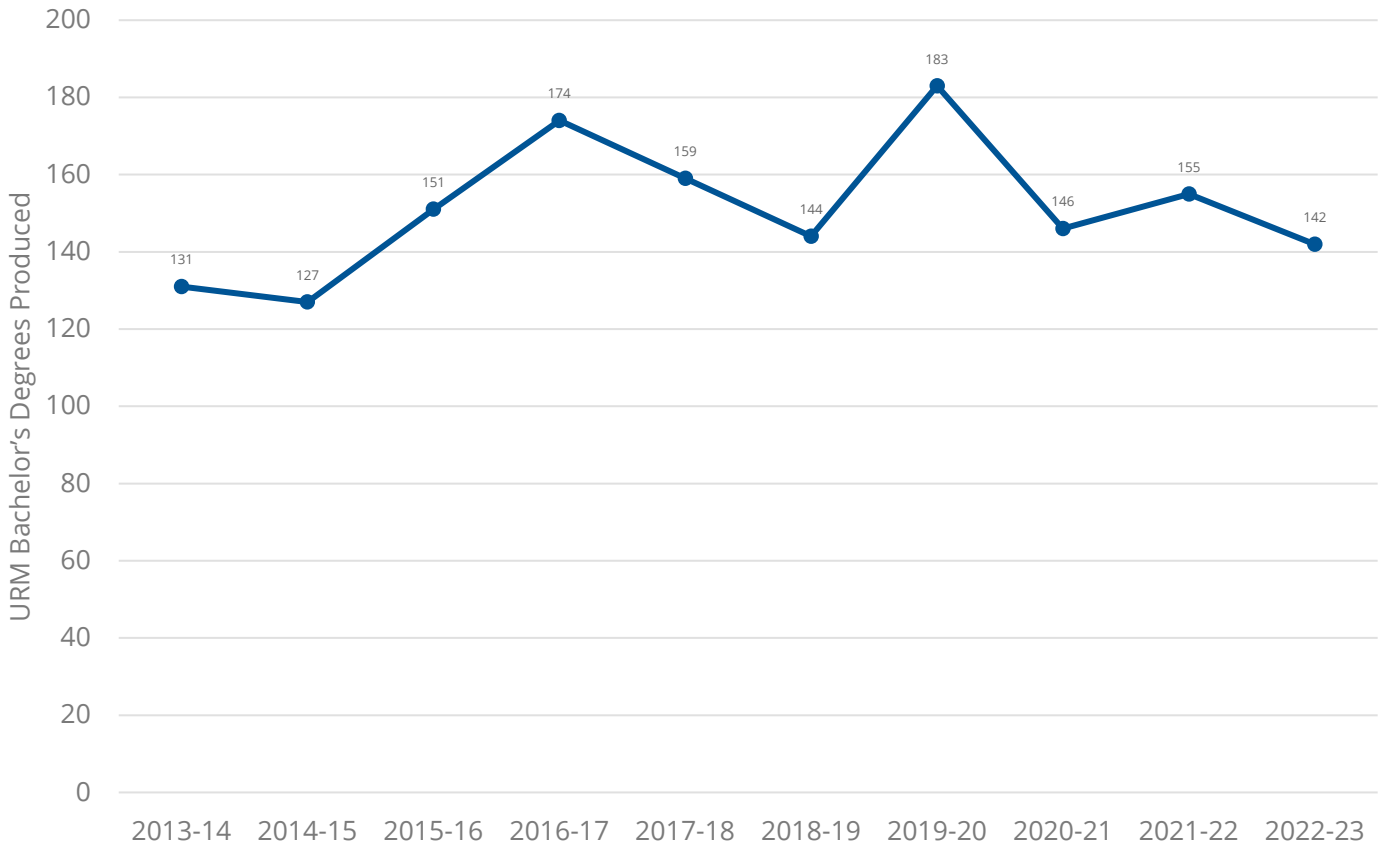
7% KY Comps[1]

number of STEM+H Bachelor's produced from 2013-14 to 2022-23

Notes: 1) KY Comps refers to all six Kentucky public comprehensive universities: Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, and Western Kentucky University. Source: Funding Model Outcomes provided by CPE.

Current State Performance on the Comprehensive Funding Model

Underrepresented Minority Student (URM) Bachelor's Produced[1]



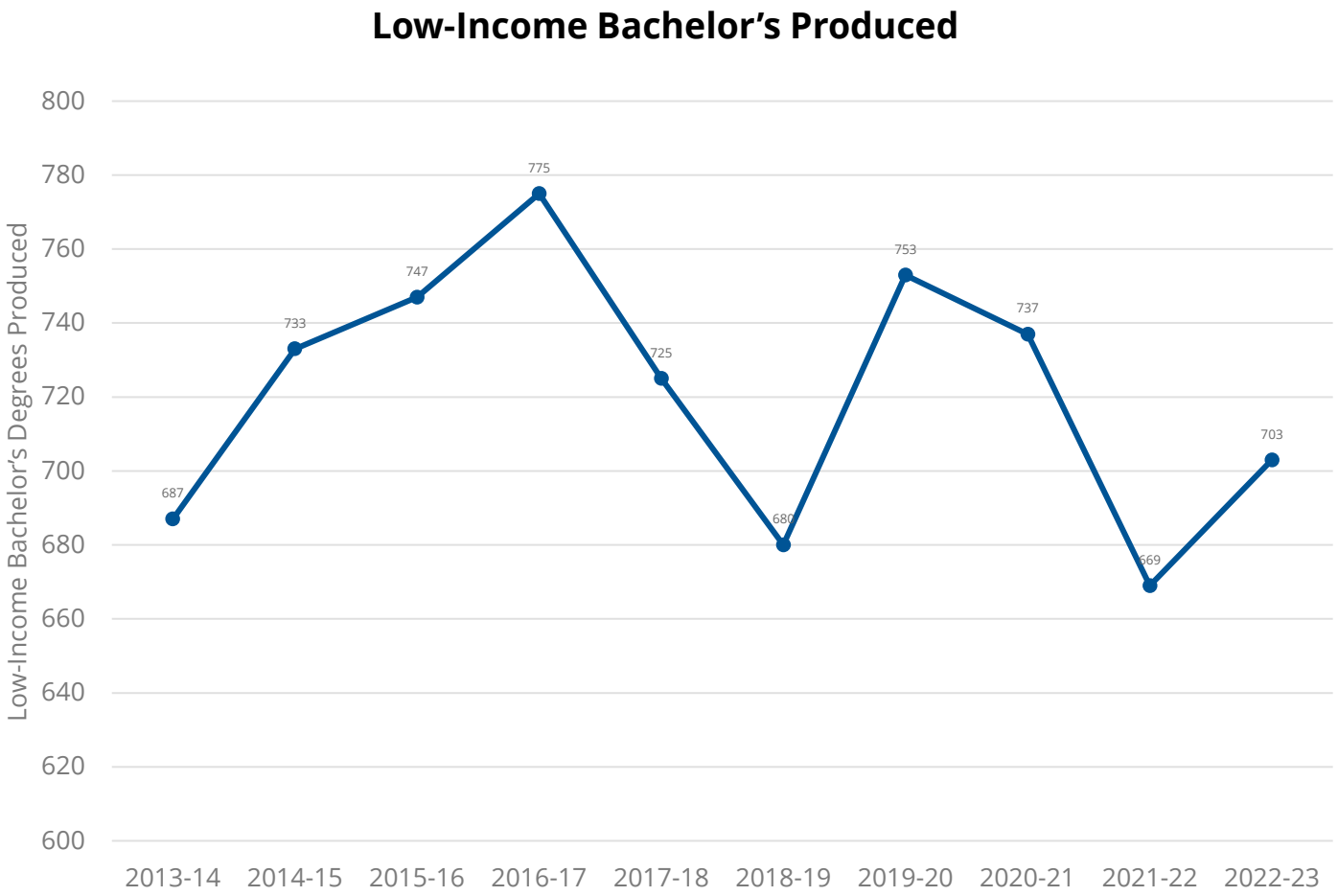
8% Murray State

23% KY Comps

number of URM Bachelor's produced from 2013-14 to 2022-23

Notes: 1)The URM Bachelor's Degrees metric has been amended to "underrepresented students", defined as "first generation college students", for the 2024-25 funding distribution.

Current State Performance on the Comprehensive Funding Model

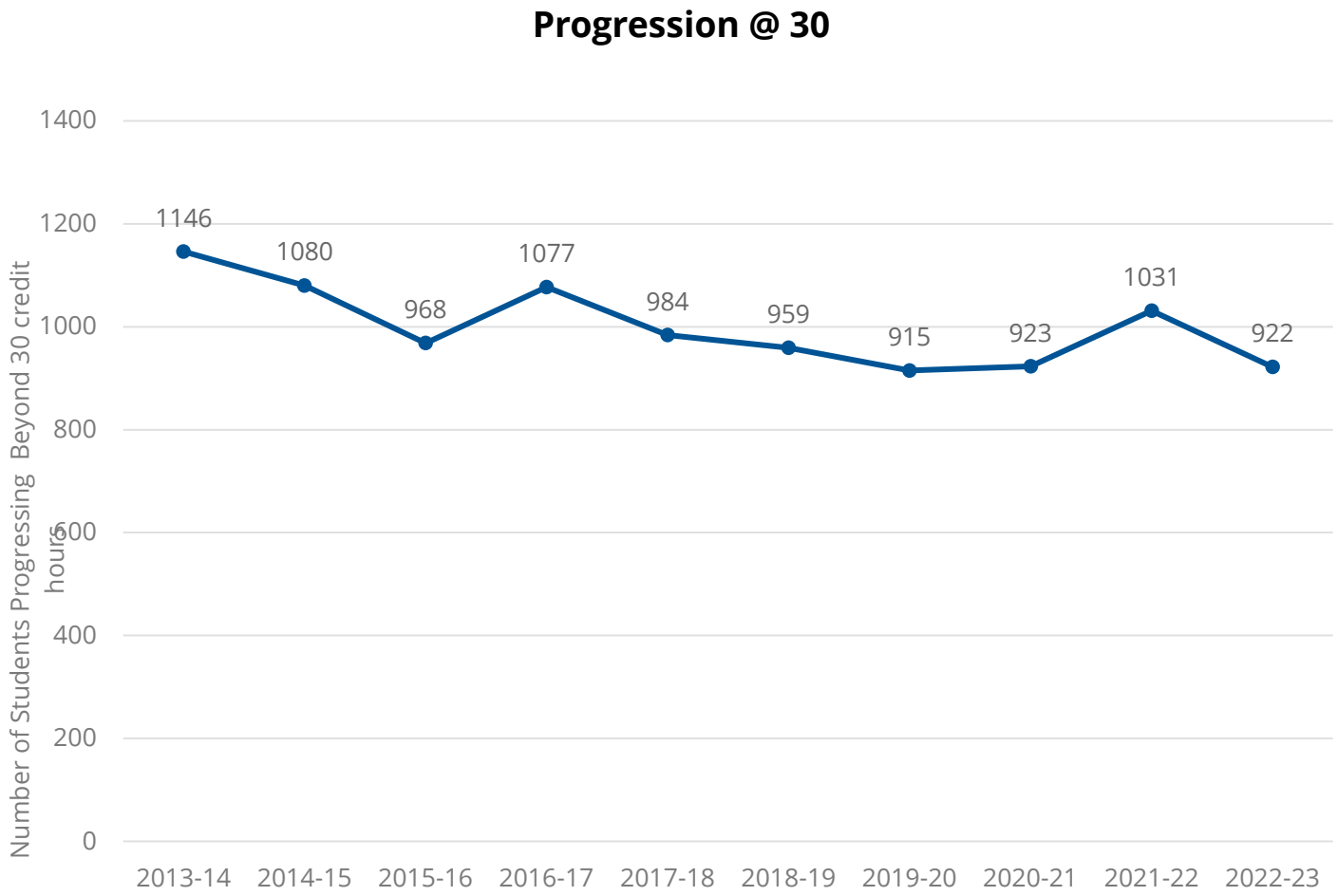


2% Murray State

15% KY Comps

number of Low-Income Bachelor's produced from 2013-14 to 2022-23

Current State Performance on the Comprehensive Funding Model



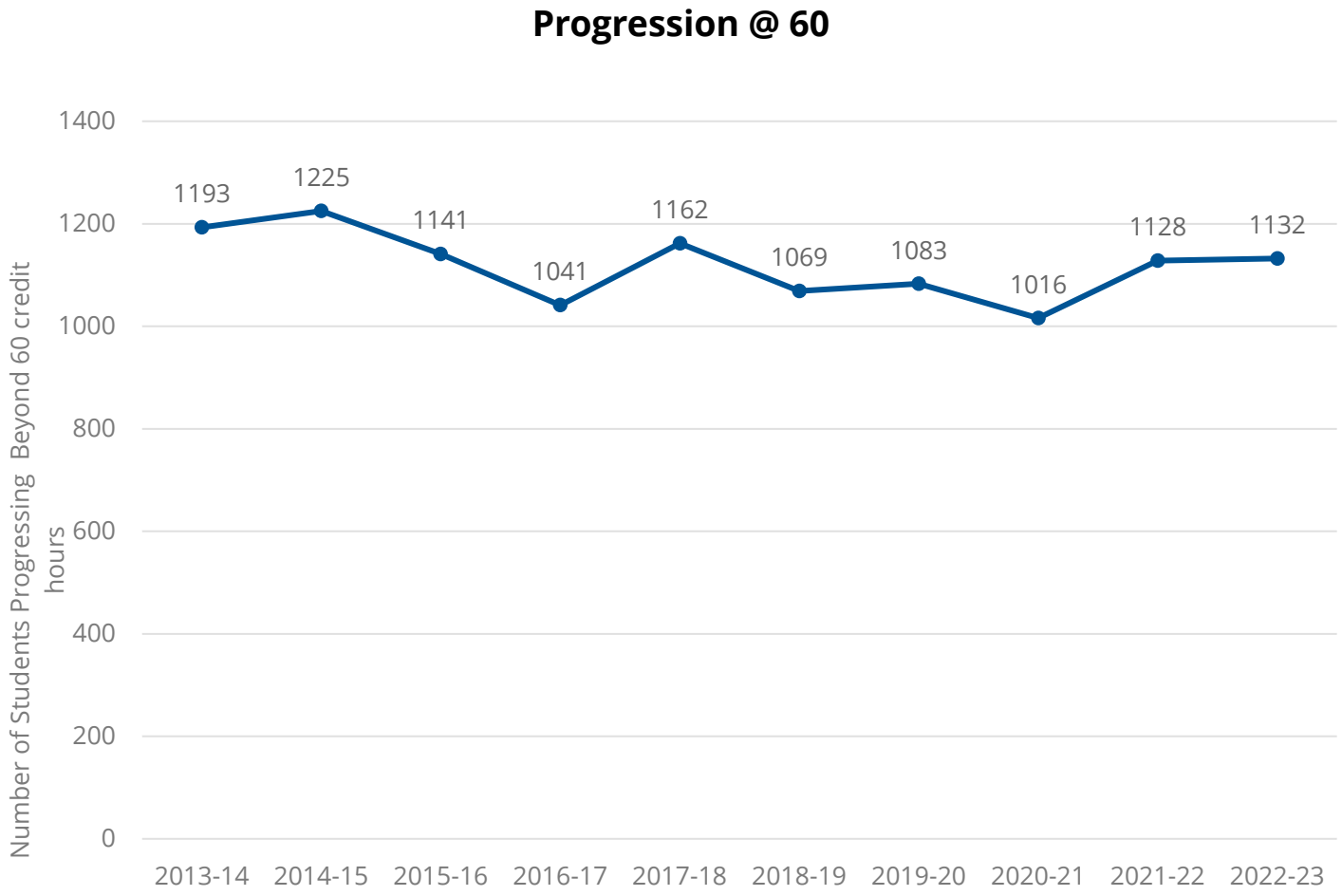
20% Murray State

20% KY Comps[1]

number of undergraduate students @ 30 hours from 2013-14 to 2022-23

Notes: 1) KY Comps refers to all six Kentucky public comprehensive universities: Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, and Western Kentucky University. Source: Funding Model Outcomes provided by CPE.

Current State Performance on the Comprehensive Funding Model

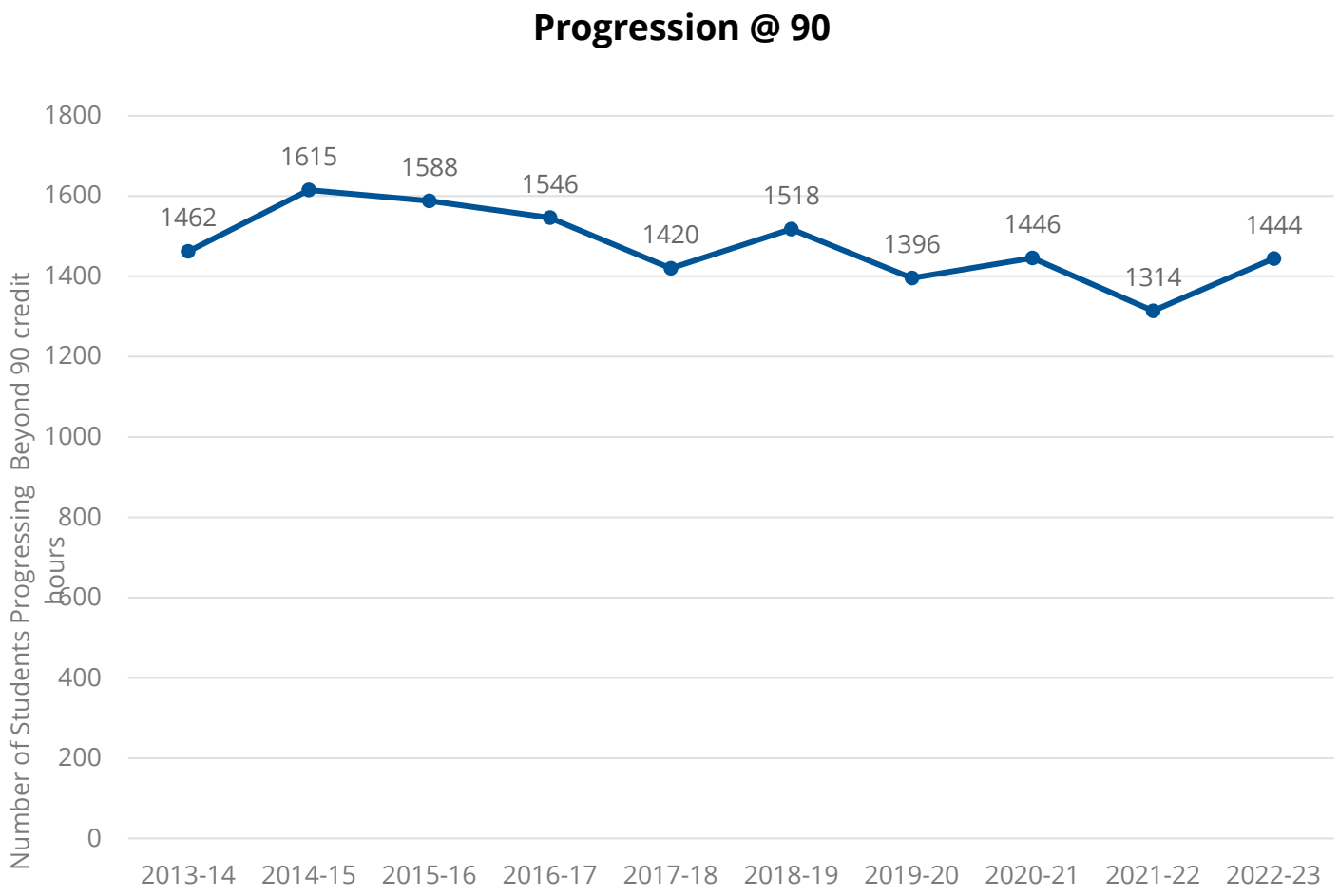


5% Murray State

15% KY Comps

number of undergraduate students @ 60 hours from 2013-14 to 2022-23

Current State Performance on the Comprehensive Funding Model

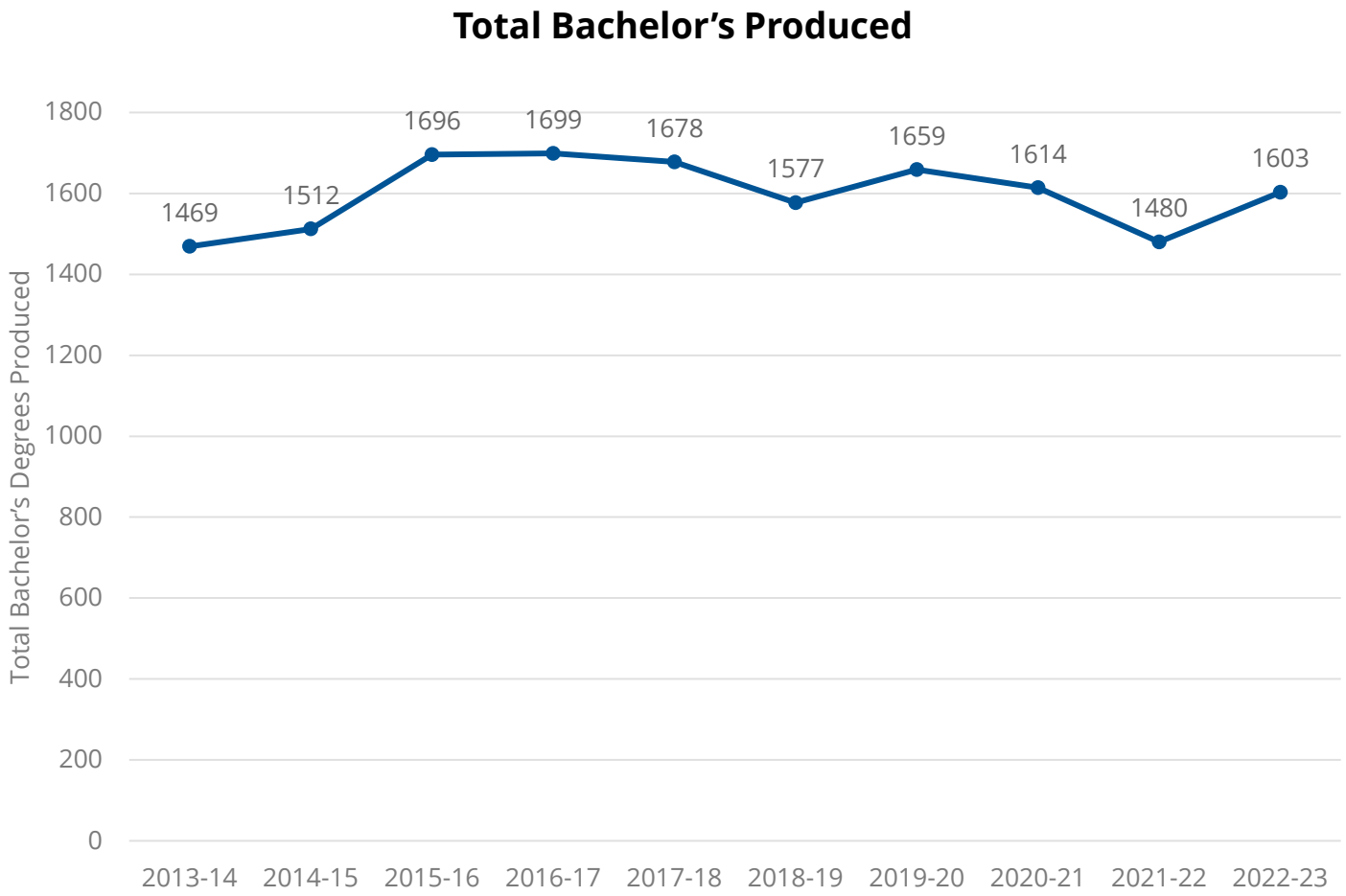


1% Murray State

11% KY Comps

number of undergraduate students @ 90 hours from 2013-14 to 2022-23

Current State Performance on the Comprehensive Funding Model



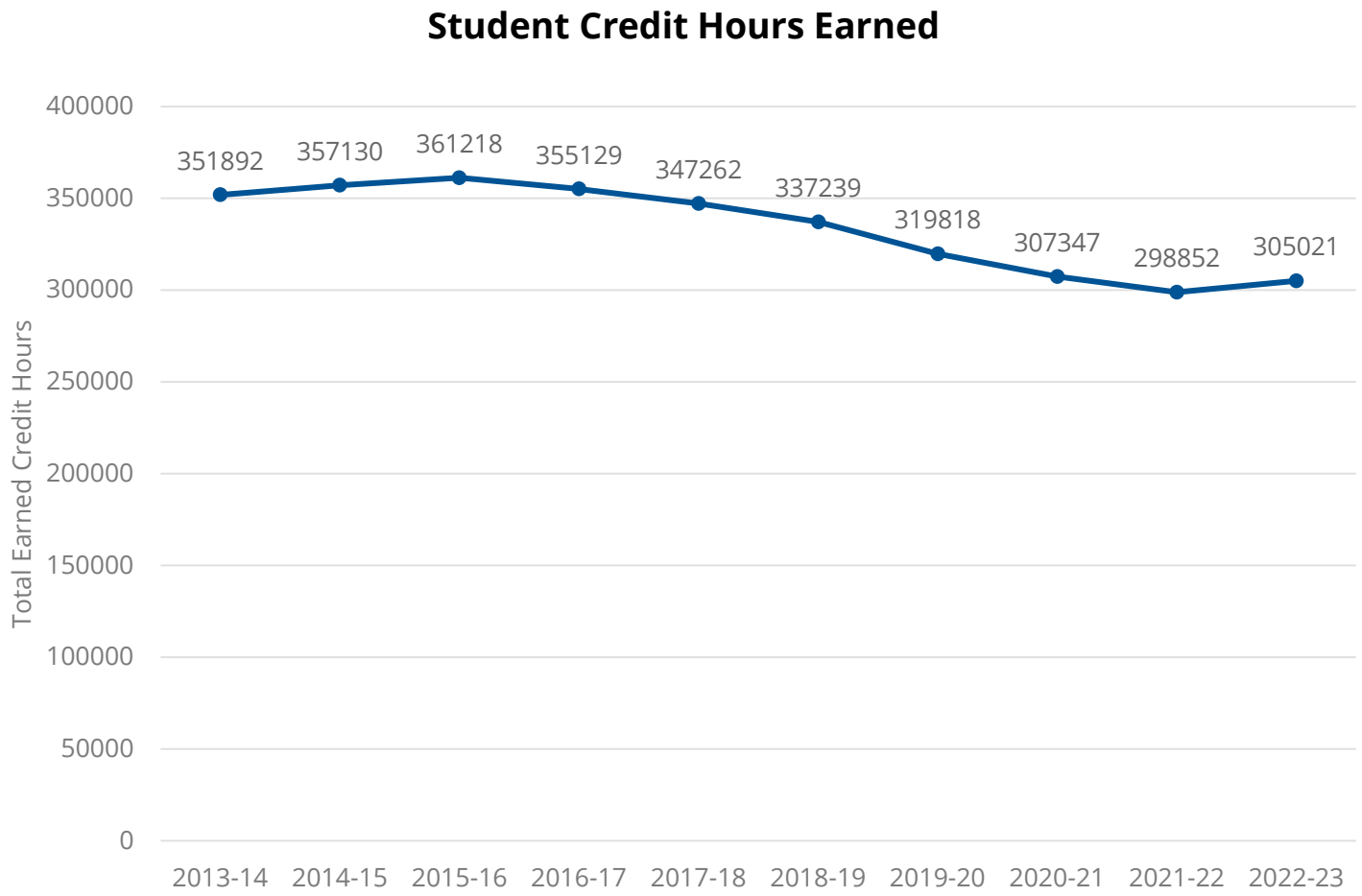
9% Murray State

8% KY Comps[1]

number of Total Bachelor's produced from 2013-14 to 2022-23

Note: 1) KY Comps refers to all six Kentucky public comprehensive universities: Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, and Western Kentucky University. Source: Funding Model Outcomes provided by CPE.

Current State Performance on the Comprehensive Funding Model

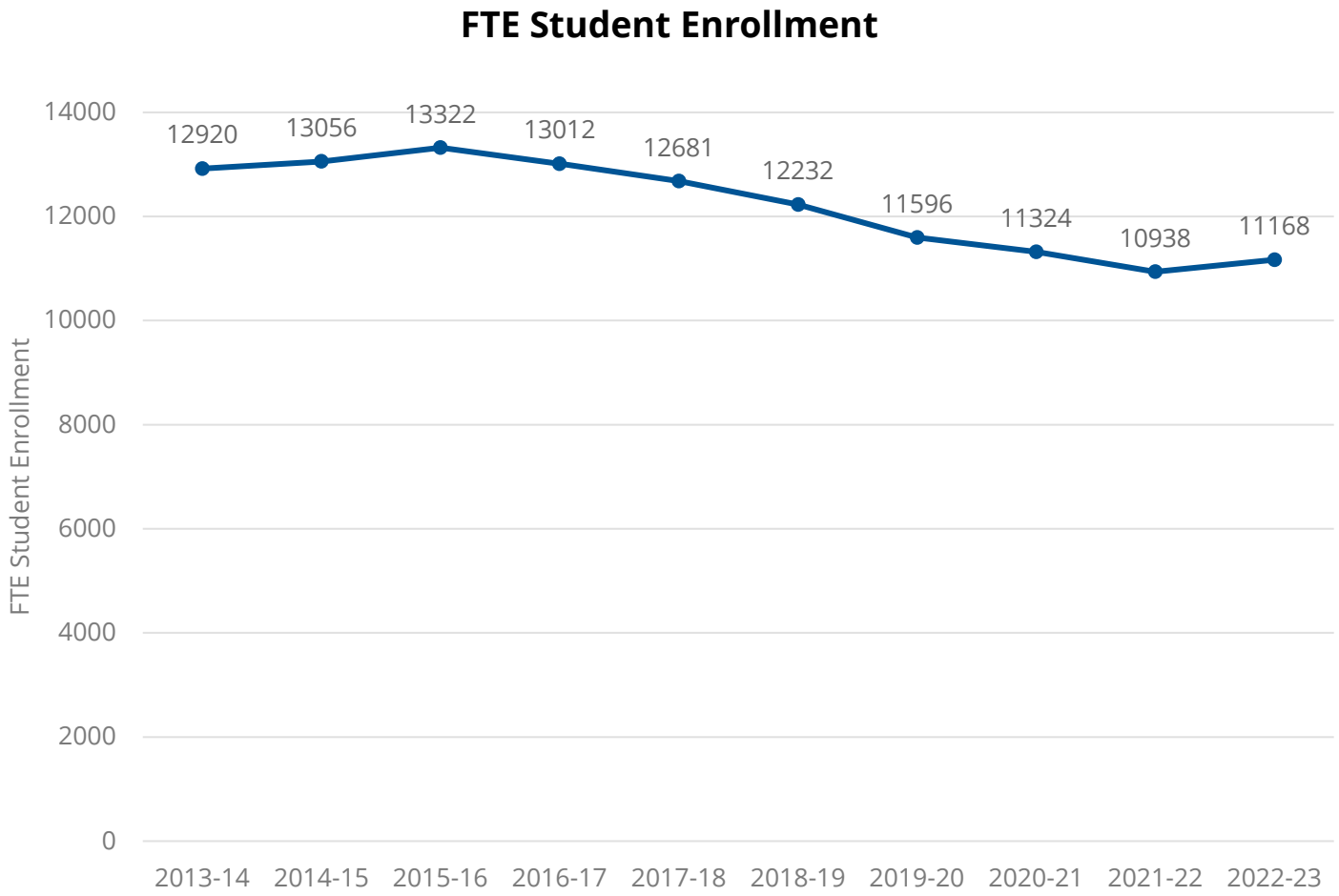


14% Murray State

16% KY Comps

number of Student Credit Hours earned from 2013-14 to 2022-23

Current State Performance on the Comprehensive Funding Model



14% Murray State

21% KY Comps

number of FTE Student Enrollment from 2013-14 to 2022-23

Murray State Benchmark Peers | Faculty Salary

The institutions listed below were used for peer salary benchmarking for Murray State University.

Institution	Average Salary of All Instructional Staff	Average Salary of "Professor" Rank
Eastern Washington University	$89,419	$115,927
Rhode Island College	$95,976	$114,346
Oakland University	$90,076	$114,183
The University of Tennessee - Chattanooga	$82,780	$111,625
Central Connecticut State University	$93,427	$110,411
Western Carolina University	$76,259	$104,961
Western Illinois University	$82,948	$101,427
University of Nebraska - Omaha	$78,853	$101,213
Plymouth State University	$80,100	$97,913
Southeast Missouri State University	$72,400	$95,484
Eastern Illinois University	$77,117	$94,552
Frostburg State University	$76,620	$94,285
University of Central Missouri	$76,210	$94,113
Indiana State University	$68,850	$89,186
University of Montevallo	$76,970	$89,058
Northwest Missouri State University	$68,768	$88,618
Stephen F. Austin State University	$70,509	$87,996
The University of Tennessee - Martin	$71,217	$84,304
Pittsburg State University	$69,645	$81,976
AVERAGE	**$78,850**	**$98,504**

Understanding Economic Impact

The IMPLAN model utilizes a methodology called input-output analysis to evaluate the potential economic impact of the proposed relocation. Input-output analysis is a means of examining the relationships within an economy between businesses, and between businesses and consumers. The resulting mathematical formula allows one to examine the effects of a change in one or several economic activities upon an entire economy (called impact analysis). Each industry that produces goods and services generates demands for other goods and services and so on, round by round. These iterations can be mathematically summarized and described by "multipliers." This buying of goods and services (indirect purchases) continues until leakages from the region stop the cycle.

MEASUREMENTS OF ECONOMIC IMPACT

- **Output** – represents the estimated increase in total production for all industries in the regionsupported by the project and is a measure of overall economic activity. Output can also be thought of as the increase in the value of total sales for the region, or "Gross Local Product".
- **Labor Income –** represents the total value of all forms of employment-based income paid to Households by a given Industry or throughout a defined economy during a specified period of time, both total payroll paid to employees (e.g. wages and salaries, supplements to wages, payroll taxes), and payments received by self-employed individuals and unincorporated business owners
- **Employment** – represents the estimated total jobs created and supported by the project, onboth a temporary and ongoing basis.

COMPONENTS OF ECONOMIC IMPACT

- **Direct effects** measure the changes in the employment and expenditures due to the operation of the development itself. Direct impacts include employment, construction, infrastructure improvements, property taxes, etc.
- **Indirect effects** measure the changes in inter-industry purchases as they respond to the demands of the directly affected industries. Indirect impacts include business-to-business purchases arising from local spending for goods and services.
- **Induced effects** measure the effects on all local industries caused by the expenditures of household income generated by the direct and indirect impacts.

CVM Economic Impact Summary – Kentucky Higher Education

MURRAY STATE UNIVERSITY PROJECT – IMPACT ON CALLOWAY COUNTY, KY

Impact Type	Effect Type	Construction (2025)	Operations – Faculty + Administrator (Single-Year)	Operations – Staff (Single-Year)
Employment (Jobs)	Direct	628	27	40
	Indirect + Induced	149	72	36
	Total	**777**	**99**	**76**
	Multiplier	**1.24**	**3.67**	**1.90**
Output ($M)	Direct	$60.0M	$18.7M	$9.2M
	Indirect + Induced	$25.4M	$12.3M	$6.1M
	Total	**$85.4M**	**$31.0M**	**$15.3M**
	Multiplier	**1.42**	**1.66**	**1.66**
Labor Income ($M)	Direct	$29.3M	$8.6M	$4.2M
	Indirect + Induced	$3.0M	$2.7M	$1.3M
	Total	**$32.3M**	**$11.3M**	**$5.5M**
	Multiplier	**1.10**	**1.31**	**1.31**

MURRAY STATE UNIVERSITY PROJECT – IMPACT ON STATE OF KENTUCKY

Impact Type	Effect Type	Construction (2025)	Operations – Faculty + Administrator (Single-Year)	Operations – Staff (Single-Year)
Employment (Jobs)	Direct	545	27	40
	Indirect + Induced	238	31	15
	Total	**783**	**58**	**55**
	Multiplier	**1.44**	**2.15**	**1.38**
Output ($M)	Direct	$60.7 M	$7.0 M	$3.5 M
	Indirect + Induced	$46.7 M	$5.7 M	$2.9 M
	Total	**$107.4 M**	**$12.7 M**	**$6.4 M**
	Multiplier	**1.77**	**1.81**	**1.83**
Labor Income ($M)	Direct	$32.8 M	$3.9 M	$1.9 M
	Indirect + Induced	$13.9 M	$1.5 M	$0.8 M
	Total	**$45.9 M**	**$5.4 M**	**$2.7 M**
	Multiplier	**1.43**	**1.38**	**1.42**

Note: "Construction" refers to the capital investments and the associated impacts of the development and construction of new educational facilities; "Operations" refers to the direct project staffing and operation of the new academic programs represented in a single-year; results are presented for both schools/academic programs and are intended to represent the impact that each project has on the respective county economy.

CVM Timeline Assumptions

The illustrative timeline 1 for opening the CVM below lays out key milestones and inflection points that significantly influence revenue, expense, and accreditation activity. The timeline below was developed using key activities and dates outlined by Murray State but includes adjustments as determined appropriate for timeline feasibility. Additionally, this timeline is our best assessment based on available information and may change as a result of unforeseen circumstances and/or program assumption adjustments.

CURRENT YEAR:

FY 2025

- General Assembly passes statutory changes to permit a doctoral program in veterinary medicine at Murray State
- CPE approves doctoral program in veterinary medicine at Murray State
- DVM Founding Dean is hired and initial steps for launching the CVM begin
- Murray State submits self-study and applies for letter of reasonable assurance[2] from AVMA COE.

FY 2026

- Initial hires are made to more fully fill faculty positions needed to develop programming
- Admissions staff hired and begin recruitment efforts

FY 2027

- Clinical agreements to support CVM students are established
- Murray State receives provisional accreditation from the AVMA COE and organizes subsequent site visits/ reports as required
- Best-case scenario, considering hiring and accreditation, would allow the first class to matriculate in FY27

FY 2028

- Murray State organizes AVMA COE site visits/reports as required

FY 2029

- Murray State organizes AVMA COE site visits/reports as required

FY 2030+

- The first full complement of students may not matriculate until FY 2030+
- Murray State graduates its inaugural class and receives full accreditation by AVMA COE. The Council on Education expects that 80% or more of each college's graduating senior students sitting for the NAVLE will have passed at the time of graduation.

Considering the full planning lifecycle, from due diligence, accreditation requirements, as well as hiring, marketing and other factors, it is realistic to assume that the CVM's first cohort would not begin until FY 2027+.

Notes: 1) Timeline considerations are based on preliminary assumptions of the DVM Financial Model provided by Murray State and initial conversations. The timeline is subject to change pending approvals and risk factors; 2) A college granted Reasonable Assurance must offer admission to and matriculate its first class of students within three years. Sources: AVMA COE Pathways to Accreditation; AVMA COE Accreditation Policies and Procedures

University Commentary

Murray State University | University Commentary

On November 19, 2024, the project team met with the Murray State University (Murray State) president and leadership team to brief them on the results of our feasibility study. At the conclusion of this briefing, the university was invited to provide commentary where they disagreed with a material element of the study, which points are captured below:

- Murray State asserts that the study's Cost-Benefit Analysis and its assumed 40 staff FTEs needed to operate the college of veterinary medicine (CVM) is overstated and does not reflect their intent of leveraging existing staff dedicated to animal care in the existing Hutson School of Agriculture and Breathitt Veterinary Center, centralized administrative staff, and student workers.
- Murray State asserts that the Workforce Alignment Assessment over-values the AVMA's assertion that there is no anticipated shortage of veterinarians and under-estimates the likelihood of Murray State graduates to practice in rural areas serving large animals.
- In relation to the Faculty Recruitment Assessment, Murray State cites recent successes in recruiting veterinarians at the Hutson School of Agriculture and Breathitt Veterinary Center as evidence that, despite the national shortage of veterinarian faculty, they will not experience significant challenges in this area.

Appendix | Additional Content

Additional External Stakeholders

The project team hosted virtual listening sessions with other leaders in Kentucky.

Stakeholder Group	Meeting Participants
Kentucky Community & Technical College System (KCTCS)	Dr. Ryan Quarles, President
Kentucky Office of the Governor	La Tasha Buckner, Chief of Staff John Hicks, Executive Cabinet Secretary Coulter Minix, Deputy Chief of Staff
Morehead State University	Dr. Jay Morgan, President
University of Kentucky	Dr. Eli Capilouto, President

APPENDIX | ADDITIONAL CONTENT

Historical Inflation Rates

Annual operating expense increases in the institutional financial projections were based on the average annual inflation rates based on the Consumer Price Index for All Urban Consumers from 2013 through 2023. Conservative scenarios used the average inflation rate from 2019-2023 (4.0%), while moderate scenarios used the average inflation rate from 2013-2023 (2.7%).

Consumer Price Index for All Urban Consumers, U.S. City Average, All Items, 2013-2023

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2013	230.28	232.17	232.77	232.53	232.95	233.50	233.60	233.88	234.15	233.55	233.07	233.05	232.96
2014	233.92	234.78	236.29	237.07	237.90	238.34	238.25	237.85	238.03	237.43	236.15	234.81	236.74
2015	233.71	234.72	236.12	236.60	237.81	238.64	238.65	238.32	237.95	237.84	237.34	236.53	237.02
2016	236.92	237.11	238.13	239.26	240.23	241.02	240.63	240.85	241.43	241.73	241.35	241.43	240.01
2017	242.84	243.60	243.80	244.52	244.73	244.96	244.79	245.52	246.82	246.66	246.67	246.52	245.12
2018	247.87	248.99	249.55	250.55	251.59	251.99	252.01	252.15	252.44	252.89	252.04	251.23	251.11
2019	251.71	252.78	254.20	255.55	256.09	256.14	256.57	256.56	256.76	257.35	257.21	256.97	255.66
2020	257.97	258.68	258.12	256.39	256.39	257.80	259.10	259.92	260.28	260.39	260.23	260.47	258.81
2021	261.58	263.01	264.88	267.05	269.20	271.70	273.00	273.57	274.31	276.59	277.95	278.80	270.97
2022	281.15	283.72	287.50	289.11	292.30	296.31	296.28	296.17	296.81	298.01	297.71	296.80	292.66
2023	299.17	300.84	301.84	303.36	304.13	305.11	305.69	307.03	307.79	307.67	307.05	306.75	304.70

Sources: U.S. Bureau of Labor Statistics Consumer Price Index Databases.