



AUGENBLICK,
PALAICH AND
ASSOCIATES

Vermont Career and Technical Education Governance and Funding Recommendations

Prepared for

Vermont Agency of Education

By

Augenblick, Palaich and Associates, Inc.

With partners

National Center on Education and the Economy and PAROS Group

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Foreword

This report was developed over the course of 2024, to support the Vermont Agency of Education (AOE) in implementing its state plan to improve career technical education (CTE) in Vermont as informed by the March 2023 legislative report, *Study on the Funding and Governance of Career Technical Education in Vermont* (authorized by Act 127 of 2022, Section 171). The recommendations in this report were developed under the assumption that Vermont’s overall systems for K-12 governance and funding were largely unchanged.

As the study team finalized this report, policy proposals were introduced in the 2025 legislative session that could dramatically change both Vermont’s K-12 governance system and funding system. One component of the policy proposals is the creation of a single statewide Board of Cooperative Educational Services (BOCES) for CTE. A BOCES governance structure differs from the single district proposed in this report. The recommendations made regarding a single district could also be applied to a statewide CTE BOCES or to a different statewide governance entity for CTE.

Executive Summary

The Vermont Agency of Education (AOE) contracted with Augenblick, Palaich and Associates, Inc. (APA) in December 2023 to support the AOE in implementing its state plan to improve career technical education (CTE) in Vermont as informed by the March 2023 legislative report, *Study on the Funding and Governance of Career Technical Education in Vermont* (authorized by Act 127 of 2022, Section 171), prepared by APA and its partner National Center on Education and the Economy (NCEE). This report documents the study team’s implementation recommendations related to specific CTE governance, funding, and AOE staffing findings in the Act 127 report. Over the past year, the study team has taken an in-depth examination of the available data, mapped current program offerings across the state, engaged stakeholders across the system through surveys, and convened a group identified by the AOE to serve as the CTE Design Advisory to provide advice and feedback to the study team throughout the year.

Governance Recommendations

The study team’s primary governance system recommendation in its Act 127 report was to consider creating either a regional governance structure or a single district for CTE to have a coordinated and coherent statewide strategy for CTE that is responsive to the state’s workforce needs. In this scope of work, the study team examined the possibilities of moving to a single CTE district and to the creation of three regional CTE districts statewide. **The study team recommends that Vermont shift to a single CTE district to oversee CTE programs across the state.** This recommendation would maintain all existing CTE Centers. The rationale for this recommendation is that this is the most straightforward and efficient way to organize Vermont’s CTE system. It would also allow for delivery of regional-based supports alongside coordinated fiscal and administrative oversight. The single district would help ensure consistency in programming, student support services, teacher support services, and avoid duplication of effort that can occur with 17 separate CTE governance systems statewide. A single CTE district is also better positioned to examine statewide workforce needs and align program offerings as needed.

The Act 127 report also recommended the state invest in additional staffing at the AOE to provide support to CTE educators across program areas and increase program quality, monitor the system, and to help ensure equity of CTE opportunity across the state. The study team conducted a review of other state education agency’s CTE staffing levels and roles. It concluded that the AOE is currently understaffed. In order to fully conduct its current responsibilities and implement the proposed shift in CTE governance, it **recommends Vermont expand the capacity of the AOE to support and oversee the state’s CTE system by four FTE. If the state chooses to implement the additional proposed system policy recommendations identified in the next section, the study team would recommend two additional staff members.**

If Vermont were to move ahead with a recommendation to increase the AOE’s capacity and move to a single CTE district structure, Vermont would need to:

- Map out new roles and responsibilities of the AOE, the new district and the 17 Centers,
- Map out new staffing for the AOE and the new districts based on these role descriptions,
- Determine if the shift to a single district would impact staffing at Centers,

- Rethink the advisory group structure for CTE in the state, and
- Develop a plan to transition to the single district.

System Policy Recommendations

Separate from, and in addition to, any changes in governance, the study team recommends several system policy and rule changes related to CTE teacher quality, CTE programming, and quality assurance and monitoring. These recommendations reflect that many factors influence CTE, not just the CTE system governance and/or funding concerns. These recommendations could be implemented with or without a change in CTE governance to positively impact the system.

Teacher Quality

The study team's recommendations related to teacher recruitment and hiring reflect the unique circumstances of CTE teachers, professionals with years of demonstrated expertise in their industry prior to entering the teaching profession. Recommendations include:

- Designating CTE teachers, or those within certain fields, as high need and offering supplemental financial bonuses to newly hired teachers such as salary bonuses or grants for licensing costs or completion;
- Consider additional flexibility for CTE teachers within the Stater Teachers' Retirement System;
- Implement a teacher recruitment and marketing campaign;
- Adopt a statewide CTE teacher salary schedule or establish a minimum CTE teacher salary; and
- Create new pathways into CTE teaching.

As most CTE teachers are second career teachers without teaching credentials upon hiring, they begin teaching while completing a four-year CTE teacher preparation program. Recommendations related to CTE teacher preparation include:

- Requiring the teacher preparation provider to review the program to be more practice-based, flexible, and streamlined; and
- Designating state funds to fully cover the cost of CTE teacher preparation program tuition.

The study team found that newly hired CTE teachers would benefit from more frequent support and onboarding and encourages additional professional development for all CTE teachers.

Recommendations regarding teacher retention include:

- Requiring Centers to provide induction support to help onboard new CTE teachers who have expertise in their industry area, but need help becoming effective classroom teachers;
- Developing a mentor training program and related evaluation; and
- Developing more comprehensive professional development, with program-specific and academic content-specific professional development.

CTE Programming

Career exploration is limited in middle school and inconsistently offered to students in grades 9-10 across the state. Only 11 CTE Centers/high schools offer Pre-Tech Exploratory and/or Foundation courses to expose students to CTE options. Recommendations for career exploration include requiring:

- All CTE Centers/high schools to provide career exploration for middle school students;
- All CTE Centers/high schools to provide Pre-Tech Exploratory and Foundation programs (or other similar opportunities) for grade 9-10 high school students; and
- The new statewide district to organize a statewide CTE recruitment campaign to encourage middle and high school students to enroll in CTE.

A lack of alignment exists with high schools and other pathway options. Vermont's local graduation requirements result in a lack of consistency in the acceptance of CTE credits as core or elective courses statewide. Similarly, some students must repeat some high school CTE coursework in postsecondary CTE programs. Approval and agreements for CTE instructors to teach Dual Enrollment and Fast Forward are negotiated between individual CTE Centers and postsecondary institutions. To address these alignment issues, the study team recommends:

- A statewide policy specifying which CTE program courses count as core content requirements and which count as electives;
- Working with CCV and VTSU to establish a statewide policy on the high school teaching credentials required to teach Dual Enrollment and Fast Forward courses; and
- The AOE and higher education system should identify CTE courses that meet first-year postsecondary requirements, ensuring that students who successfully complete the pathway will have only one year of study after high school to earn their career credential.

Each CTE Center's local need assessment is the main determinant of CTE programming in Vermont, and students are generally limited to CTE programs offered at the designated CTE Center. Recommendations to encourage a statewide strategy to align CTE programming with state workforce goals include:

- Offering financial incentives to CTE Centers to offer programs in priority industry areas identified in the state Workforce Innovation and Opportunity Act plan;
- Identifying a core set of programs to be accessible to all students across the state and consider using technology to broaden access; and
- Discontinuing CTE programs with consistently low student enrollment and in cases where it is not realistic to provide transportation for students from outside the region to attend.

Quality Assurance and Monitoring

Center Standards. Vermont does not currently require that Centers have academic support teachers. Only 12 of the 17 CTE Centers have designated academic instructional support staff. CTE Centers are currently not required to have a staff member who is responsible for onboarding newly hired teachers.

Student and teacher supports thus vary from Center to Center. The study team recommends State Board Rule be amended regarding CTE Center Standards to require:

- All CTE Centers to have at least one full-time academic teacher, preferably two: English and Math. If a Center serves a certain population of English learners (EL), that Center should also be required to have an EL teacher.
- All CTE Centers designate a staff member responsible for new teacher induction and mentoring.
- A minimum staff/student ratio for support positions so that Centers with larger student populations have adequate counselors and special education supports

The CTE student experience can vary widely based on sending high school, program, and Center. The study team recommends the following adjustments to program standards:

- The AOE should identify required elements of all programs including core curriculum, competencies and industry-recognized credentials, embedded college courses/Fast Forward, work-based learning requirements, etc.;
- The AOE should identify and or develop teacher resources for implementing program-specific curriculum including scope and sequences, shared lesson plans and other tools; and
- Provide supports to programs that do not meet standards and have clear authority to close programs with long-standing problems.

Monitoring CTE Centers and Tracking CTE Data. The AOE is required to do quality visits to CTE Centers every five years but lacks the staff capacity to do this well. Centers may, but are not required, to pursue accreditation from an outside entity. Study team recommendations for monitoring CTE Centers and tracking CTE data include:

- Requiring Centers to get accredited or expand AOE staff capacity to conduct visits to the CTE Centers on a regular basis;
- Providing technical assistance to Centers and/or programs that don't meet standards; and
- Developing a plan to collect, synthesize and display real-time CTE system data (at the state, CTE Center, and program levels) beyond Perkins requirements.

CTE Funding Recommendations

To support the AOE in implementing a CTE funding model based on the cost findings in APA's Act 127 report, the study team used available data to develop more specific recommendations. As a result of this examination of data, the study team reconsidered each of its Act 127 report recommendations. **The core recommendation – to provide student-centered CTE funding that eliminates tuition from sending districts – remains.** The study team also still recommends moving away from the six-semester average FTE count for funding purposes but no longer recommends differentiating funding based on CTE program type.

Exploring Weighted Student Funding with Differentiated Funding by Program Area

The study team examined what it would take to implement a weighted student funding formula with differentiated funding by CTE program type, a recommendation of the Act 127 report. It sought to examine current expenditures across Centers by program. State-level expenditure data for CTE does not code expenditures by program, so the study team requested budget information, by program, from CTE Center directors. While the budget data showed variation in program costs across centers, the budget categories were not consistent enough across centers for the study team to have a high level of confidence in the budget analysis.

The study team then sent a survey on perceptions of program costs to all CTE Center directors and encouraged them to share the survey with their finance/budget staff. The survey asked about perceptions of each CTE program of study's costs both for start-up costs and ongoing program costs. With this data the study team calculated the average score for each program's perceived ongoing program costs by CTE Center administrators. Each program was then assigned a score: 1 representing lower cost programs, 2 for mid-cost programs, and 3 for higher cost programs; and each Center's current program offerings were averaged to determine the average perceived cost rating. Across all 17 centers, the average rating for all offered programs ranged from 1.24 to 1.69. When excluding pre-tech programs, the average cost rating increases slightly, from 1.36 to 1.83.

The relatively small range in perceived average Center costs suggests that most centers have a mix of low, mid, and high cost programs. While the study team previously recommended differentiating funding by CTE program type, it is **no longer recommending differentiated funding based on program type**. Adding differentiated funding would add an unnecessary layer of complexity to CTE funding, without impacting Centers in a meaningful way, given the relatively even distribution of programs. Rather, the study team **recommends a single CTE per student (FTE) cost**.

Calculating a CTE Per Student (FTE) Cost

The study team examined the available data to calculate a per student (FTE) CTE cost, recognizing the current variation in tuition rates across centers statewide. The study team utilized the expenditure data from FY21, FY22, and FY23, along with the semester FTE data for the same years. To isolate the costs of implementing CTE programming, the study team isolated expenditures for program codes 31 and 32 (the accounting codes used to identify expenditures made for career and technical education) and calculated each center's expenditures per FTE. The median expenditure per FTE across all Centers in FY23 was \$25,184, when excluding federal expenditures, the median expenditure per FTE was \$23,303.

The study team next calculated median expenditures per FTE (in FY 21, FY22, and FY23) on a variety of factors that represent some of the variation within the system, to see what impact, if any, exists on expenditures based on:

- whether centers were full or part day programs;
- the academic supports provided to students – some centers have academic support personnel imbedded in centers, while other centers do not have dedicated academic support staff; and

- levels of success of CTE Centers – the five highest performing public CTE Centers were identified by the FY 23 state Perkins summary data on measures of postsecondary credentials, postsecondary credits, work-based learning, and post-program placement for inclusion in the analysis.

In each of these grouping of high performing centers, the expenditures per FTE are quite close to the overall median expenditures per FTE shown calculated for all Centers.

The study team suggests the per FTE cost for CTE should be set using the center median as a guide. Recognizing that these figures are from FY23 and only include expenses actually incurred by the centers in that time period, the **study team proposes a per CTE FTE for FY26 of \$25,000.**

Alternative to the 6-Semester Average FTE for CTE Funding

In keeping with its previous recommendation, the study team still **recommends moving away from the 6-semester rolling average FTE for CTE funding.** The extended impact of a 6-semester CTE calculation creates budgeting challenges for CTE Centers as they work to expand programs and increase access but are funded on an outdated enrollment figure. Since there are both full and part day programs, utilizing an FTE calculation seems appropriate to account for those differences. The **study team recommends moving to a “best of” calculation,** where the CTE district will receive funding based on the best of either the prior 2-semester average FTE for all centers, or its 6-semester average FTE, providing the CTE district with funding for a more accurate count of students. Using the best of calculations provides a cushion if a Center experiences declining enrollment in a single year. It also avoids the need for a true-up process if using estimated current year enrollment, where state funds might need to be repaid if actual enrollment was lower than the anticipated enrollment.

Source and Flow of Funds

A key recommendation in the Act 127 report stated that funding should flow directly to CTE Centers from the Education fund, and that the funding should flow directly to CTE Centers “off the top” of the Education Fund, eliminating tuition-based funding. With the recommendation in this report to form a single CTE district to manage career and technical education statewide, it would no longer be appropriate to direct funds to the CTE Centers. Rather, **all funding generated through the per FTE amount is recommended to go to the new CTE district,** which will be responsible for distributing funding to Centers. With a single Perkins state plan, the district would have the ability to allocate federal Perkins funding along with state funding to best meet the needs of centers and students across the state. This change means that center-level budgets become a component of the CTE district’s overall budget, much like how school districts allocate funding to the schools they operate.

The second part of the recommendation, that **funding should come “off the top” of the Education Fund, eliminating tuition-based funding, remains a recommendation of the study team.** During the Act 127 study and throughout the course of stakeholder feedback in this study, the consistent message received from stakeholders statewide was to find a way to eliminate the competitive nature of CTE

funding and reduce funding disincentives to send students to CTE. By eliminating tuition payments, sending districts would no longer face the direct budgetary impact of sending students to CTE programs.

Funding to Increase Accessibility of CTE Centers

The study team previously recommended providing additional funding and incentives or grants to create more accessibility for students whose sending high school is not on a shared campus with a CTE Center. Given the above recommendation to eliminate tuitioning, intended to reduce the competition for funds between sending districts and the CTE system, **the study team no longer recommends additional incentives for students whose sending high school is not on a shared campus with a CTE Center.**

Transportation was identified as a significant barrier to student participation in CTE in both studies. The study team recommends that **transportation should become the responsibility of the new CTE district to coordinate, rather than sending schools, and that state transportation reimbursement funding would thus flow to the new district.** This would require close coordination and cooperation with the sending schools.

Capital and Facilities Funding for CTE Centers

The Act 127 report also recommended a facilities funding system for CTE programs to address current facilities deficiencies, update program equipment, address enrollment needs, with a focus on updating facilities and growing capacity for the programs most needed for workforce development in the state. **APA strongly recommends the creation of a state facilities funding program for CTE.** Many CTE Centers simply need repair and building upgrades, and others report that in addition, they maintain wait lists for enrollment, but do not have the resources to expand to accommodate increased enrollment.

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Introduction

The Vermont Agency of Education (AOE) contracted with Augenblick, Palaich and Associates, Inc. (APA) in December 2023 to support the AOE in implementing its state plan to improve career technical education (CTE) in Vermont as informed by the March 2023 legislative report, *Study on the Funding and Governance of Career Technical Education in Vermont* (authorized by Act 127 of 2022, Section 171), prepared by APA and its partners National Center on Education and the Economy (NCEE)¹. APA again partnered with NCEE and PAROS Group to complete this scope of work.

This report provides the study team’s implementation recommendations for CTE governance and in Vermont. Over the past year, the study team has taken an in-depth examination of the available data, mapped current program offerings across the state, engaged stakeholders across the system through surveys, and convened a group identified by the AOE to serve as the CTE Design Advisory (Advisory Group), to provide advice and feedback to the study team throughout the year. Advisory Group members are listed in Appendix A. The report’s recommendations were further enhanced by the study team’s participation in the AOE’s Listen and Learn Tour, where education leaders, educators, and members of the public provided input on education in Vermont, including CTE.

This report is organized first with governance systems, then related educational system recommendations, followed by funding system recommendations, and finally with the identification of existing state statutes and State Board of Education Rules that would need to be created, amended, or repealed to implement the recommendations.

¹ <https://lifo.vermont.gov/assets/Uploads/f97d32b9a4/Final-CTE-Study-Report-3.31.23.pdf> See in particular: CTE in the US and Other Countries (Appendix C) and CTE State Governance Model Table (Appendix D)

CTE Governance Recommendations

The APA-led study team was asked to do a further analysis of Vermont’s varying regional CTE governance structures and make recommendations for how the system might be reformed to be more efficient, equitable, and effective. This governance review focused on four specific recommendations identified in APA’s Act 127 report:

- Consider creating either a coordinated regional governance structure or a single district for CTE (Recommendation 10, systems change);
- Review CTE teacher preparation and licensure requirements and salary policies with an aim of attracting high-skilled industry professionals to teaching (Recommendation 5, policy change);
- Invest in additional staffing at AOE to provide support to CTE educators across program areas and increase program quality, monitor the system, and to help ensure equity of CTE opportunity across the state (Recommendation 6, state capacity); and
- Examine current distribution of programs across the centers in the state and consider offering more programming outside of CTE centers (e.g., at sending schools or college) to expand opportunities for students (Recommendation 9, systems change)

This section begins with a discussion of the study team’s overall governance structure recommendations and is followed by a set of related policy recommendations based on its analysis.

Governance System Recommendations

Current CTE Governance

Currently, CTE students in Vermont are served by 17 CTE Centers, each serving students from local sending high schools, with three distinct governance structures: 11 CTE Centers within an LEA; four regional technical center school districts; and two independent schools providing public CTE. In one region, some CTE is provided by a comprehensive high school that is geographically distant from the nearest CTE Center.

This variation has the benefit of allowing CTE Centers to customize their offerings and structures to the needs of their sending schools. At the same time, there is concern that the variation is unnecessarily complicated and makes the administration and oversight of these systems inefficient, contributing to:

- Inequities in program access and quality for students,
- A lack of consistency of policies across the system, and
- Weak alignment with postsecondary pathways and state economic development goals.

AOE oversees the full system but does not have sufficient capacity to effectively monitor it, provide support to Centers, and ensure alignment with broader workforce goals for the state. AOE staff report that because of the varied governance structures, their time is often taken up with administrative guidance and ensuring compliance with federal Perkins requirements rather than curriculum support, teacher support, data collection and analysis, strategic planning, and overall system improvement.

In addition to oversight by AOE, there are several different advisory groups operating at different levels and for different purposes. The state requires CTE Centers housed in SU/SDs to form a Regional Advisory Board (RAB) to represent all sending districts in the region and other stakeholders. The RAB reviews and advises on CTE Center programming and budget, but the ultimate authority for decision making lies with the host LEA governance board. The four Regional Technical Center School Districts are required to have governing boards; these boards approve rather than just advise on programming and budget decisions. They do not, however, represent as broad a set of stakeholders as the RABs. Each CTE Center also has a program advisory committee (PAC) for each of its programs, as required by Perkins. These are made up of individuals with industry knowledge who can advise on the relevance of program content, levels of student performance, work-based learning opportunities, and strategies for program improvement. The number of advisory boards and committees across the state means that the same individuals, employers, and workforce experts are often serving on boards or committees for multiple centers simultaneously.

Examining Alternative Governance Options

The study team began its work by considering a range of governance options, drawing on a review of structures in other states — focused on other small and rural states and those with strong CTE systems — as well as input from an advisory group representing key stakeholders in Vermont. It evaluated governance options in terms of efficiency, viability and how best to:

- Maintain local autonomy within a state CTE framework.
- Maximize staff talent by better distributing expertise and avoiding duplication of effort.

In addition, it was agreed that:

- The goal of any governance change is to create a clear and equitable framework within which Centers can operate, not to reduce their autonomy to organize programs to best serve their students. A governance change also aims to raise the profile of CTE at the state level, as a key part of the state's forward-looking economic strategy.
- Only options that would leave all current CTE Centers in place would be considered.
- Independent schools would continue to operate separately from the CTE district(s) but would still be required to adhere to state quality standards and requirements.

Two potential options for reorganizing CTE regional governance emerged to best meet these goals: *creating a single statewide CTE district or creating three regional CTE districts.*

Both options would:

- Require hiring staff for the new CTE district(s) and for the AOE;
- Require shifting some roles and responsibilities among the AOE's CTE Division, the new district(s) and CTE Centers. Most of the shifts would be at the administrative level at the AOE and the district(s), not at the CTE teacher level;

- Allow the state to streamline administrative and budgeting functions and provide a more efficient structure for building capacity to better monitor the system, align programming with state economic development goals, and support both CTE teachers and students; and
- Provide an opportunity to streamline program and employer advisory committees to better reflect regional and state economies and to ensure stakeholder input in each region, including input from sending high schools

Neither proposed option would mean reducing overall staffing; both would likely require added staffing to strengthen the system's overall capacity. The goal would be to use current and potential additional staff more efficiently and effectively. Both would require shifts in roles at the state and district level to streamline current processes and add more capacity to support Centers. The team weighed the benefits of each option.

A single CTE district could:

- Be the simplest and most straightforward option, which may be a useful approach in a small state system and to communicate about the system to stakeholders and the legislature;
- Allow flexibility to create regionally based supports in ways that are fit for purpose; and
- Be the most efficient and economical in terms of overall staffing numbers.

Regional CTE districts could:

- Map onto existing economic regions and/or geographic and transportation networks;
- Gain more support from stakeholders who prefer a higher degree of localized governance;
- Enable more differentiated support to Centers in each region; and
- Improve coordination by reducing regions from 17 to three.

Overall, the team recommends that Vermont shift to a single CTE district. The study team believes a single CTE district allows for the statewide coordination of services that will best serve the state's needs, will provide a framework for consistent student and educator support statewide, and provide the opportunity to coordinate support regionally as appropriate.

Expansion of AOE Capacity

Alongside a single CTE district, the study team also recommends that Vermont expand the capacity of AOE to oversee the CTE system. The study team's review of current state staffing and roles suggest that AOE does not currently have the capacity to fully monitor quality of programming at Centers, consider strategy across Centers in terms of alignment with state workforce goals, plan for change and for improvement, and provide support consistently. It compared Vermont's state staffing to other comparable states; Vermont has a smaller staff than most, even ones of comparable size student populations. The staffing section below makes suggestions for additional core staff to fulfill required responsibilities; a second set of staffing recommendations to fulfill the roles detailed can be found in the policy recommendations section, aimed at making the system higher quality, more closely linked to economic priorities, more equitable for students and more efficient with the state's resources.

Goals of a Single District Governance Model

The new governance model would offer Vermont several benefits:

- A simpler, consistent approach to governance with well-defined roles and responsibilities for the AOE, the new district, CTE Centers, and advisory boards;
- Improved efficiency by centralizing some functions such as HR, finance, contracting, and payroll, as well as streamlining internal processes;
- Improved coordination among Centers and between Centers and sending schools for policies such as program admissions, completion and student supports; school and professional development calendars; and how to demonstrate proficiency needed for graduation;
- Increased support for teachers and programs, including induction for new teachers and on-going professional development;
- Support for administration and budgeting which could include consolidation of functions; and
- Improved transparency in programming, staffing, and budgetary decision-making based on a re-mapping of roles and responsibilities.

A governance change would also better enable Vermont to articulate and meet state-level CTE goals, including:

- Strengthened CTE student outcomes statewide with a focus on closing equity gaps;
- Improved student access to consistent, high-quality CTE programming aligned to state workforce goals;
- Prioritized support for CTE programs in industries that are key to maintaining Vermont's competitiveness; and
- Improved alignment between secondary and postsecondary CTE pathways.

Implications of Governance Recommendations

If Vermont were to move ahead with a recommendation to increase the AOE's capacity and move to a single CTE district structure, Vermont would need to:

- Map out new roles and responsibilities of the AOE, the new district and the 17 Centers
- Map out new staffing for the AOE and the new districts based on these role descriptions
- Determine if the shift to a single district would impact staffing at Centers
- Rethink the advisory group structure for CTE in the state
- Develop a plan to transition to the single district

Roles and Staffing

Proposed Staffing for the New CTE District

A proposed core staffing structure for the new district, with 10 positions, is identified in Table 1 below. In addition to the core staff proposed, Vermont will need to decide how much additional district staffing is needed and feasible for increased Center support. The recommendations involve creating some new positions with new roles (e.g., creating special needs specialists at a regional level to service multiple

CTE Centers.) Staffing for the new district would be offset, at least in part, by a reduction in staffing of current regional and supervisory districts.

Table 1: Proposed Core Staff for New CTE District

Job Title	Number
Executive Director (liaison to workforce system and higher education, planning, partnership development and community outreach)	1
Assistant Director (HR, quality management, facilities oversight)	1
Perkins Grant Manager	1
Budget/Finance	2
Data Monitoring	1
Regional Support Coordinators (special needs, academic support, professional development, technology)	4
Support Experts (including specific industry areas, career counseling, work-based learning)	TBD

Staffing to Expand Capacity of AOE

APA’s Act 127 report recommendation 6 called for the state to invest in additional staffing at AOE to strengthen CTE program quality, improve system monitoring, and ensure the equity of CTE opportunity across the state. The study team provided an initial analysis of AOE and CTE Center staffing capacity and roles in the governance analysis memo submitted to AOE in June 2024 (see Appendix B). This memo also included a comparison of Vermont’s state level CTE staffing with that of a set of benchmark states. The study team concluded that AOE was understaffed and that any governance change recommendations should be accompanied by recommendations to expand AOE capacity. Table 2 below shows the study team’s recommended new staffing levels. To accomplish its current work, the study team recommends AOE expand its staff by four. To have the capacity to accomplish expanded roles laid out in the System Policy Recommendations section below, the study team recommends adding an additional two staff members.

Table 2: Proposed Additional Staff for AOE

Additional Core Staff	Number
Curriculum development and credential mapping	1
Coordination with postsecondary and workforce partners	1
Data management and analysis	1
Quality management and support	1
Expanded Roles	Number
Career coaching and exploration coordinator	1
Education technology strategy and planning	1

Advisory Groups

The study team also proposes some changes to the current set of CTE advisory boards. Given the goal of balancing local workforce needs with statewide needs, the study team **proposes a shift from Center based program advisory committees (PACs) to statewide ones**, except in situations where a particular industry only has a presence in one region of the state. It is still critically important for individual Centers to have advice from local stakeholders, so the team **recommends creating center-based advisory boards**. This is a shift from the RAB model of boards with decision making authority to a purely advisory structure. Given the shift to a single district, a common structure for these Center-based boards could be created.

Finally, the team **proposes the creation of a new statewide advisory board for the new CTE district**.

The membership could include employers, representatives from economic development and workforce agencies, AOE and possibly VACTED. The state should consider whether this board should approve the district’s budget and/or programming decisions or just serve in an advisory role. In addition to advising on these matters, it could also play a role in raising the profile of CTE statewide and identifying new sources of support for the system.

System Policy Recommendations

Separate from - and in addition to - any changes in governance, the study team recommends several policy and rule changes based on its analysis and findings related to Act 127 report recommendations 5 and 9. This section summarizes, and slightly updates, sections of the memo submitted by the study team to the AOE in June 2024 (Appendix B). The memo proposed policy and/or regulation changes to address challenges in two key areas:

- CTE Teacher Quality (Act 127 report recommendation 5)
 - Teacher Recruitment and Hiring
 - Teacher Preparation
 - Teacher Retention
- CTE Programming (Act 127 report recommendation 9)
 - Career Exploration
 - Alignment of CTE with High School Graduation Requirements
 - Clarifying Dual Enrollment/Fast Forward Teacher Credential Policies
 - Alignment of CTE with Postsecondary Pathways
 - Statewide CTE Strategy

The study team has since added a third key area for analysis with policy recommendations to improve:

- Quality Assurance and Monitoring
 - CTE Center Standards
 - CTE Program Standards
 - Monitoring CTE Centers and Tracking CTE Data

In general, the study team assumes the AOE would be responsible for these tasks, although the study team did attempt to identify specific policies and rules that would need to be changed. As mentioned above, the AOE would require additional staff capacity to fulfill these additional responsibilities.

CTE Teacher Quality

Teacher Recruitment and Hiring

Vermont, like many other states, has trouble attracting a pool of qualified CTE teacher candidates. CTE teachers are required to have work experience in the occupational area they teach in, which means teachers are recruited after working and building expertise in a particular industry. Some professionals may be reluctant to move into teaching because of the lower salary. This is especially true for those in certain industry areas, such as manufacturing, IT, or the trades, where professionals can command significantly higher pay in that industry than in teaching. For instance, starting pay for a CTE teacher is around \$40,000, while an entry level software engineer could make above \$70,000².

CTE teacher pay varies across the state, as it is determined by locally negotiated teacher contracts. Centers with lower pay scales face more challenges recruiting teacher talent and sometimes lose

² <https://www.indeed.com/career/entry-level-software-engineer/salaries/VT>

existing teachers to other centers with higher pay. Another issue is that districts have different approaches to equate a candidate's years of experience and academic degrees or industry credentials in relation to the standard teacher salary scale which pays higher salaries to teachers with advanced degrees. This also results in salary differences among Centers.

Recommendations

The study team received feedback from multiple stakeholders questioning the feasibility of setting a statewide CTE teacher salary schedule to address salary variation and inequities across the state, given the variation among collective bargaining agreements across districts currently. If a single CTE district was created, however, this option would be more feasible, and the study team recommends that the state consider adopting a single districtwide CTE teacher salary schedule.

Regardless of whether a statewide CTE salary schedule is adopted, the state could improve CTE teacher recruitment by:

- Designating CTE teachers, or those within certain fields, as high need and offering supplemental financial bonuses to newly hired teachers such as grants for licensing costs or salary bonuses. Recognizing industry certifications/work experience on par with BA/MA degrees on salary pay scales.
- Revising the statute³ that governs the Vermont State Teachers' Retirement System pension calculations to allow CTE teachers who enter teaching later in their careers to count at least some of their years of industry work experience as creditable teaching service. This would need further refinement, but some options include:
 - After a CTE teacher has taught for a required minimum period of time, awarding that teacher pension credit for a certain number of years of industry service;
 - Have the district pay in two years for every one year a CTE teacher works in the system and allow that to count in terms of retirement; and
 - Create a district-funded additional retirement fund; educators at Stafford Technical Center currently have an additional retirement benefit available.
- Setting a minimum starting salary for CTE teachers, if a statewide salary schedule is not adopted. The study team's review of the 2023-24 salary schedule showed a broad range of starting salaries in place now, the lowest of which is in the low \$40,000s. The state might consider raising that, to help with recruitment and provide more equity across the system.
- Design and implement a statewide teacher recruitment and marketing campaign;
- Create new pathways into CTE teaching, including:
 - Pathways for academic teachers who are interested in transitioning into CTE teaching roles and need content training, not pedagogical training; and
 - Grow-your-own CTE teacher pathways that tap young local talent.

3

https://legislature.vermont.gov/statutes/fullchapter/16/055?_gl=1*fz0y8s*_ga*MTU4OTI3OTE1NS4xNzMyNiUwN1Qy*_ga_V9WQH77KLW*MTczMzQzMjg1NS4yLjEuMTczMzQzMjkyNy4wLjAuMA

CTE Teacher Preparation

Most CTE teachers are second career teachers and do not have teaching credentials upon hiring. Currently, these teachers are hired as “apprentices” and begin teaching while completing a four-year preparation program. The program includes 10 courses (24 credits) conducted over two summers and one Saturday a month. Teachers join as a cohort and there is little flexibility in pacing or entry with one cohort starting each year. Teachers report that the program is too long, somewhat rigid in its structure, and too theoretical in terms of the content covered in the classes.

The CTE Centers have different policies regarding program tuition. Many Centers cover the full cost of the preparation program (approximately \$10,000-\$12,000) for candidates, about half only cover part of it. Those covering partial costs typically pay for 3-6 credits, about \$2,000-4,000 total, leaving much of the cost obligation on the teacher candidate. In addition, Centers often use a reimbursement model, which may require long periods to process.

Recommendations

To make the preparation and licensure process more straightforward, more relevant and less burdensome on candidates, the state should:

- Require the current preparation provider (CTTEP at Vermont State University⁴) or a new provider to review the sequence of required courses and restructure the preparation experience to be more practice-based, flexible, and streamlined. Suggestions include:
 - Combine courses where possible to shorten the program. For example, the Special Education course content could be integrated into another teaching course.
 - Allow the portfolio and observation tasks to be completed on a more flexible timeline and perhaps as part of the expectations of other courses.
 - Restructure the program as a mix of self-paced courses and cohort-based courses to allow more flexibility in starting new cohorts of students and for students to progress at their desired pace.
- Designate state funds to cover CTE teacher preparation program tuition. This change would simplify transactions and ease the entry process for new CTE teachers. The entire cohort of teacher candidates averages about 60 teachers across the four-year program so covering the cost of 15 new teacher candidates per year should not be overly burdensome.

Teacher Retention

Vermont does not currently require induction or ongoing mentoring for CTE teachers. Newly hired CTE teachers would particularly benefit from more frequent support and onboarding as they transition from industry jobs into teaching without a teaching certification. The CTTEP preparation program has expanded from four days of coaching observations over the course of the four-year program to 15 days (about 2 weeks) over two years. However, even with this change, new CTE teachers would benefit from more onboarding support at the Center level, which is currently inconsistent. Most, but not all Centers,

⁴ <https://cewd.vtc.edu/cewd/career-technical-teacher-education-program/>

assign a district coach/mentor to new CTE teachers. The state does not, however, have any policies on mentor selection, training, evaluation, or compensation.

In terms of professional development, the state organizes one summer CTE conference, a series of Technical Education and Collaboration meetings (fall and spring), equity learning cohorts (two times per year plus optional follow up events), and some minimal content training, such as writing workshops, as the AOE staff capacity allows. In addition, AOE staff provides some non-instructional technical assistance sessions on topics such as data collection, Perkins application writing, WorkKeys requirements, etc.

Recommendations

To strengthen the onboarding and ongoing support of CTE teachers as a retention strategy, the state should:

- Require CTE Centers to provide new teachers with induction support, including mentoring and co-teaching with a highly qualified experienced teacher for at least six months, and preferably one year.
- Develop or adopt mentor teacher selection criteria, a mentor training program, and a method of evaluation.
- Develop and provide more comprehensive teacher professional development, including program-specific, content-focused professional development. This would require organizing a calendar of events and working with CTE Centers to ensure teachers are released and have coverage when they are absent.

CTE Programming

Career Exploration

Currently, there is no statewide career exploration programming to allow middle school students to explore their personal interests and strengths and build their awareness and understanding of CTE programming and career opportunities. At the high school level, career exploration is not offered consistently across the state to students in grades 9-10. Only 11 CTE Centers/high schools offer Pre-Tech Exploratory and/or Foundation courses to expose students to CTE options. Total enrollment in these courses is under 1,500 students statewide, which is approximately 9 percent⁵ of students in those grades. Current State Board rules⁶ require CTE Centers to provide program information to potential students within their regions to assist the student in making a decision to enroll. It is the responsibility of the sending schools to provide “reasonable opportunity” for CTE options for students in grades 7-12. However, many CTE Center directors report that not all students are able to attend information sessions and that there is a need to build awareness.

Recommendations

To give younger students the opportunity to learn about careers and CTE options, the state should:

⁵ https://nces.ed.gov/programs/digest/d23/tables/dt23_203.40.asp

⁶ <https://education.vermont.gov/sites/aoe/files/documents/edu-state-board-rules-series-2370.pdf>

- Require all CTE Centers/high schools to provide career exploration for middle school students. This can include virtual and summer programming as needed;
- Require all CTE Centers/high schools to provide Pre-Tech Exploratory and Foundation programs (or other similar opportunities) for grade 9-10 high school students. The programs could be offered at the Centers and/or at the sending high schools; and
- Require the new statewide district to organize a statewide CTE recruitment campaign to encourage middle and high school students to enroll in CTE.

Alignment of CTE with Local High School Graduation Requirements; Dual Enrollment/Fast Forward Teacher Credential Policies; and Postsecondary Pathways

Vermont CTE programs vary depending on where they are located. The study team identified three key alignment issues:

1. How CTE courses can fulfill high school requirements are determined locally. This means that in some districts the same CTE courses fulfill core proficiency requirements in math or science and in others they only count as electives.
2. There is a lack of consistency in the credential requirements for teachers of Dual Enrollment and Fast Forward classes for CCV or VTSU. Each CTE instructor must be approved to teach dual enrollment based on negotiated local MOUs between CTE Centers and postsecondary institutions.
3. CTE Center partnerships with colleges are ad hoc and program dependent, which means that students do not always have a clear program to move into within the state for a next level credential and/or they are required to repeat coursework, wasting time and resources.

Recommendations

- Set a statewide policy specifying which CTE program courses count as core content requirements and which ones count as electives;
- Coordinate with CCV and VTSU to establish a statewide policy on the high school teaching credentials required to teach Dual Enrollment/Fast Forward classes recognizing higher education accreditation requirements and
- Identify courses in each CTE pathway that will be recognized by Vermont higher education institutions as meeting the first-year requirements, ensuring that any student that has successfully completed the pathway will have only one year of study to get to their career credential after high school.

Statewide CTE Strategy

The state through 2023-24 supported 58 CTE programs, which has just been reduced to 49 programs for 5,000 CTE students. Local need assessments are the main determinant of CTE programming in Vermont currently, and students are generally limited to CTE programs offered at their designated regional CTE Center. This is one area where a single CTE district would be especially impactful in developing and implementing a statewide CTE strategy. The lack of a statewide strategy for distributing a broad mix of CTE programs across the state has a number of negative impacts:

- There is no mechanism for aligning CTE programming with state workforce goals. The study team identified several priority industry areas that are not well represented in CTE programming currently;
- CTE virtual options are limited, with only one pilot currently in place;
- There are inefficiencies that could be addressed:
 - Overlap in some program areas and opportunities for consolidating programs;
 - Some programs are consistently underenrolled; and
 - Programs in some centers have waiting lists while the same program in neighboring regions are under-enrolled.

Recommendations

- Offer incentives to CTE Centers to offer programs in priority industry areas identified in the state Workforce Innovation and Opportunity Act (WIOA) plan;
- Identify a core set of programs and require those to be accessible to all students across regions;
- Consider using technology as a way of broadening access;
- Continue to identify opportunities to consolidate CTE programs to focus resources more efficiently. Advance CTE recently released a refreshed career cluster framework⁷; Vermont could use this as an opportunity to rethink and reduce program offerings;
- Raise the minimum number of students in a funded CTE program from seven⁸ to perhaps eight or ten in its Perkins State Plan; and
- Discontinue CTE programs with consistently low student enrollment and in cases where it is not realistic to provide transportation for students from outside the region to attend. The state could set a policy for discontinuation such as after two years of enrollment of under five students or three years of enrollment under the minimum. Underenrolled programs would be given an option to redesign and request reapproval.

Quality Assurance and Monitoring

Center Standards

The State Board of Education has rules⁹ with staffing requirements that each School Board operating a CTE Center must comply with. All Centers must have a director, guidance coordinator, adult services coordinator, cooperative education/student apprenticeship coordinator, and a special education teacher. The study team identified three gaps in the staffing requirements:

Academic Instructional Support: There is no requirement that Centers provide academic support staff for students. Only 12 of the 17 CTE Centers have any designated academic instructional support staff, usually in English. About half of the centers have a math academic teacher. Only a few centers have

⁷ https://careertech.org/wp-content/uploads/2024/11/Guidebook_-_National-Career-Clusters-Framework-1.pdf; <https://careertech.org/career-clusters/>

⁸ <https://education.vermont.gov/sites/aoe/files/documents/edu-cte-perkins-v-state-plan-summary-document-3-size-scope-and-quality.pdf>

⁹ <https://education.vermont.gov/memos/required-staffing-and-licensure-career-technical-educators>

teachers for science, social studies, or English as a second language. With only 44 percent of CTE students meeting academic proficiency standards in ELA and only 53 percent in math¹⁰, there is a need for more consistent integrated academic instruction, even though the level of student support provided may vary between full and part time programs.

Teacher Induction: CTE Centers are currently not required to have a staff member who is responsible for onboarding newly hired teachers. Supports provided are ad hoc and vary from Center to Center. Given that CTE teachers begin teaching as “apprentices” before they complete their required training, it seems particularly important that the state develop a consistent process for providing comprehensive induction support.

Staff/Student Ratio: Staffing requirements do not take overall student population or student/staff ratios into account. Currently staffing requirements apply to all Centers, without regard to their student load.

Recommendations

Update the current rules on CTE Center staffing to:

- Require all CTE Centers to have at least one full-time academic teacher, preferably two: English and Math. If a Center serves a certain population of English learners, that Center should also be required to have an EL teacher.
- Require all CTE Centers to have a staff member responsible for teacher induction and mentoring per the study team’s recommendation earlier in this section that Centers provide new CTE teachers with induction support and mentoring.
- Adjust minimum staffing numbers to account for student enrollment to ensure a reasonable caseload for student-facing positions such as guidance and special education.

Program Standards

The state does not currently have a CTE framework that defines standards for CTE programs to ensure they are consistently high-quality. As a result, the student experience can vary widely based on sending high school, program, and Center. For example, without a state developed or identified curriculum for every program, teachers are left to develop their own and the rigor of instruction is inconsistent. Not all students have access to substantial work-based learning experiences or dual enrollment/Fast Forward courses.

Recommendations

To ensure programs are of consistent high quality, the state should:

- Identify required elements of all programs including core curriculum, competencies and industry-recognized credentials, embedded college courses/Fast Forward, work-based learning requirements, etc.
- Identify and or develop teacher resources for implementing program-specific curriculum including scope and sequences, shared lesson plans and other tools

¹⁰ <https://cte.ed.gov/pcrn/profile/state/performance/2023/VT/summary/all/secondary/summary>

- Require the AOE/district to provide supports to programs that do not meet standard and close down programs with long-standing problems

Monitoring CTE Centers and Tracking CTE Data

The AOE is required to do quality visits to CTE Centers every five years but lacks the staff capacity to do this well. CTE Centers have the option of getting accredited by an outside entity, but because this is voluntary, not all of them do. Vermont needs a method for not only assessing student safety but also determining if CTE programming offered at each Center is high-quality. Additionally, while the AOE currently collects the required Perkins data, the state would benefit from a more transparent and real-time CTE data system that is used to inform teaching, learning, and system monitoring.

Recommendations

- Require CTE Centers to get accredited or expand AOE staff capacity to conduct visits to the CTE Centers on a regular basis. The purpose of visits would be to monitor compliance with Center and program standards as well as safety standards.
 - Provide technical assistance to Centers and/or programs that do not meet standards.
 - Close Centers that do not meet safety standards or that do not consistently meet Center and program standards.
- Develop and implement a plan for collecting, synthesizing and displaying real-time CTE system data (at the state, CTE Center, and program levels) beyond what is required by Perkins.

The full governance analysis memo, submitted by the study team to the AOE in June 2024, with specific policy recommendations around CTE program offerings, CTE teacher preparation/licensure requirements and salary policies, and AOE staff capacity and roles, can be found in Appendix B.

CTE Funding Recommendations

To support the AOE in implementing a CTE funding model based on the cost findings in APA's Act 127 report, the study team used available data to develop more specific recommendations. As a result of this examination of data, the study team reconsidered each of its Act 127 report recommendations. **The core recommendation – to provide student-centered CTE funding that eliminates tuition from sending districts – remains.** The study team also still recommends moving away from the six-semester average FTE count for funding purposes but no longer recommends differentiating funding based on CTE program type. The three funding recommendations that were made in the Act 127 report are:

- Design a funding system that treats all CTE equitably while incentivizing additional CTE capacity in high-growth sectors, utilizing a weighted student funding formula that differentiates funding by CTE program type with funding flowing directly to CTE Centers from the Education fund, eliminating tuition-based funding. Additionally, eliminate the six-semester FTE average for funding purposes (*Act 127 Report Recommendation 3*).
- Create a facilities funding system for CTE programs to address current facilities deficiencies, update program equipment, address enrollment needs, and plan for the future. The system should focus on updating facilities and growing capacity for the programs most needed for workforce development in the state (*Act 127 Report Recommendation 2*).
- Provide additional funding and incentives or grants to create more accessibility for students whose sending high school is not on a shared campus with a CTE Center (*Act 127 Report Recommendation 1*).

Each Act 127 recommendation is addressed within this section and a comparison table at the end of the section tracks where the study team's recommendations differ in this report from the Act 127 recommendations.

Exploring Weighted Student Funding with Differentiated Funding by Program Area

Throughout the study team's work on CTE in the state, it consistently heard from stakeholders the need to ensure CTE funding is equitable and is structured in a way that removes the current competition for funding between sending districts and CTE Centers. The study team began its funding implementation work by examining what it would take to implement a weighted student funding formula with differentiated funding by CTE program type, a component of Funding Recommendation 3 in the Act 127 report.

To understand how a weighted student funding formula that differentiates funding by CTE program type would fit in Vermont, the study team worked to examine current expenditures across Centers by program. State-level expenditure data for CTE does not code expenditures by program, so the study team requested budget information, by program, from CTE Center directors. Sixteen of the 17 centers were able to provide some level of budget data to the study team. While the budget data showed variation in program costs across centers, the budget categories were not consistent enough across centers for the study team to have a high level of confidence in the budget analysis.

With the advice of the Advisory Group, the study team then sent a survey on perceptions of program costs to all CTE Center directors and encouraged them to also share the survey with their finance/budget staff. The survey asked about perceptions of program costs, both for start-up costs and ongoing program costs. It asked respondents to assign each program to either low, mid, or high cost, with a “don’t know” option. Directors and finance staff were able to assign their perceived cost to all programs, not just those in operation at their center. All 17 centers responded to the survey.

Table 3 below shows the average score assigned to each program’s perceived ongoing program costs by CTE Center administrators. The study team then assigned a score of 1, 2, or 3 to each based on the average score, 1 representing lower cost programs, 2 representing mid-cost programs, and 3 representing higher cost programs.

Table 3. CTE Center Administrator Perceptions of Program Cost

Program/Cluster	Average Score	Assigned Score
Aviation Maintenance Technician	2.80	3
Heavy Equipment	2.64	3
Auto Body Repair	2.40	3
Aviation – Flight Science	2.33	3
Diesel Technology	2.31	3
Welding	2.25	2
Manufacturing	2.24	2
HVAC	2.21	2
Electrical and/or Plumbing	2.19	2
Automotive Technology	2.18	2
Dental Assisting	2.18	2
Building/Construction Trades/Carpentry	2.14	2
Natural Resources/Forestry	2.14	2
Culinary Arts	2.11	2
Emergency Services/EMT or EMR	2.09	2
Diversified Agriculture/Animal Science	1.87	1
Engineering/Mechatronics/STEM	1.86	1
Health Sciences	1.71	1
Information Technology/Cybersecurity/Computer Networking/Gaming	1.67	1
Cosmetology	1.54	1
Public Safety/Criminal Justice/Pre-Law	1.47	1
Business/Accounting	1.21	1
Human Services/Teacher Education/Early Childhood Education	1.19	1

Using the assigned score, the study team then looked at each center’s current program offerings to calculate the average perceived program cost rating by center. As Table 4 below shows, each center’s average rating for all offered programs ranged from 1.24 to 1.69. When excluding pre-tech programs, the average cost rating increases slightly, from 1.36 to 1.83.

Table 4. Average Cost Rating of All Programs by Center

Center	Average Rating, All Programs	Average Rating, Excluding Pre-Tech Programs
Burlington Technical Center	1.55	1.60
Central VT Career Center	1.57	1.62
Cold Hollow Career Center	1.43	1.50
Essex, Center for Technology	1.44	1.50
Green Mtn. Tech. & Career Ctr.	1.55	1.60
Hartford Career & Tech. Ctr.	1.47	1.50
Lyndon Institute	1.38	1.63
North Country Career Ctr.	1.42	1.64
Northwest Technical Center	1.24	1.40
Patricia Hannaford Career Ctr	1.44	1.67
Randolph Technical Career Ctr	1.69	1.75
River Bend Career & Tech Ctr	1.33	1.46
River Valley Technical Center	1.31	1.45
St. Johnsbury Academy	1.36	1.83
Stafford Technical Center	1.53	1.53
SW VT Career Development Ctr	1.24	1.36
Windham Regional Career Ctr	1.57	1.62

The relatively small range in perceived average Center costs suggests that most centers have a mix of low, mid, and high cost programs; there aren’t centers offering only low cost or mostly high cost programs. While the study team previously recommended differentiating funding by CTE program type, where higher cost programs would be funded at higher levels than lower cost programs, **the study team is no longer recommending differentiated funding based on program type**. Adding differentiated funding would add a layer of complexity to CTE funding, without impacting Centers in a meaningful way, given the relatively even distribution of programs.

Calculating a CTE Per Student (FTE) Cost

The study team examined the available data to calculate a per student (FTE) CTE cost, recognizing the current variation in tuition rates across centers statewide. The study team received data from the AOE, including revenue and expenditure data for all 15 public CTE Centers for fiscal years 20-23, funding FTE data for FY18-25, and center semester FTE data for FY20 through first semester 2024. Detailed expenditure data for the two independent schools is not included in the AOE’s dataset.

The study team utilized the expenditure data from FY21, FY22, and FY23, along with the semester FTE data for the same years. To isolate the costs of implementing career and technical education programming, the study team filtered on expenditures for program codes 31 and 32 (the accounting codes used to identify expenditures made for career and technical education) and calculated each center’s expenditures per FTE. Using a per FTE expenditure figure rather than a per student or enrollment figure allows for like comparisons, even though some centers offer full day programs while others have part day programs. With a small number of centers, the study team opted to include all centers in the dataset and calculate the median expenditures – the point where half the centers had higher and half had lower expenditures – rather than excluding outlier high and low spending centers. As Table 5 below shows, the median expenditure per FTE in FY23 was \$25,184, when excluding federal expenditures, the median expenditure per FTE was \$23,303.

Table 5. Median Expenditures Per CTE FTE, Program Code 31 & 32

	FY21	FY22	FY23
Median Expenditures Per FTE, Program Code 31 & 32, All Expenditures	\$22,853	\$23,420	\$25,184
Median Expenditures Per FTE, Program Code 31 & 32, Excluding Federal	\$20,041	\$21,822	\$23,303

The study team next calculated median expenditures per FTE on a variety of factors that represent some of the variation within the system, to see what impact, if any, exists on expenditures. Variations explored included whether centers were full or part day programs; the academic supports provided to students – some centers have academic support personnel imbedded in centers, while other centers do not have dedicated academic support staff; and levels of success of CTE Centers. For measures of success, the five highest performing public CTE Centers were identified by the FY 23 state Perkins summary data on measures of postsecondary credentials, postsecondary credits, work-based learning, and post-program placement for inclusion in the analysis. Twelve of the fifteen public centers appeared in the top five performers in at least one category. Median expenditures per FTE, both with and without federal funding, are shown in Table 6 below.

Table 6. Median Expenditures per CTE FTE for Selected Centers/Variables, Program Code 31 & 32

Variables	FY21		FY22		FY23	
	Total	Without Federal	Total	Without Federal	Total	Without Federal
Centers with full day programs	\$23,089	\$20,585	\$23,420	\$21,822	\$25,435	\$23,026
Centers with part day programs	\$21,984	\$19,634	\$25,379	\$23,627	\$24,731	\$23,803
Centers with academic support personnel	\$23,089	\$20,585	\$23,420	\$21,822	\$25,435	\$23,026
Top performing, postsecondary credentials	\$22,853	\$19,841	\$23,420	\$21,822	\$24,948	\$23,026
Top performing, postsecondary credits	\$25,418	\$23,369	\$28,084	\$24,893	\$26,336	\$24,704
Top performing, work-based learning	\$23,084	\$20,449	\$23,208	\$21,348	\$25,541	\$23,303
Top performing, post program placement	\$22,623	\$19,634	\$21,215	\$19,841	\$25,985	\$24,184

In each grouping of centers, the expenditures per FTE are quite close to the overall median expenditures per FTE shown in the previous table. Two groupings that had slightly higher median expenditures per FTE than the overall median were the top performing centers for postsecondary credits and post program placements, with FY23 expenditures per FTE approximately \$800 to \$1,400 higher than the overall CTE Center median expenditures per FTE. Additional summary analysis tables are included in Appendix C.

This analysis was intended to identify the amount currently spent on CTE, translated to a statewide CTE per student (FTE) cost, which could be used as a per pupil funding figure per FTE for CTE students. A limitation of this analysis, however, is that it only accounts for actual center expenditures. Some centers ask families to contribute toward the costs of assessments related to postsecondary credentials and postsecondary credits due to budgetary constraints. While not a large expenditure, these costs ideally should be funded by the system, not by families. Another cost not included in this analysis is any additional staffing costs incurred by the creation of a new district.

The study team suggests the per FTE cost for CTE should be set using the center median as a guide. Recognizing that these figures are from FY23 and only include expenses actually incurred by the centers in that time period, the study team **proposes a per CTE FTE for FY26 of \$25,000.**

Alternative to the 6-Semester Average FTE for CTE Funding

In keeping with the recommendation from the Act 127 report, the study team still **recommends moving away from the 6-semester rolling average FTE for CTE funding.** The previous report noted the extended impact of the COVID pandemic on CTE Center funding, as decreased enrollment due to the pandemic in 2020-21 continued to bring down the calculated FTE for years, providing funding for fewer students than enrolled. Even without a pandemic, the extended impact of a 6-semester CTE calculation creates

budgeting challenges for CTE Centers as they work to expand programs and increase access but are funded on a 6-semester basis.

Since there is a variety of program offerings across the state – full and part day – utilizing an FTE calculation seems appropriate to account for those differences. The **study team recommends moving to a “best of” calculation**, where the CTE district will receive funding based on the best of either the prior 2-semester average FTE for all centers, or its 6-semester average FTE. This will provide the CTE district with funding for a more accurate count of students attending, and in the event of decreasing enrollment, having the 6-semester average option will help cushion a potential loss of funding.

Source and Flow of Funds

Recommendation 3 in the Act 127 report also stated that funding should flow directly to CTE Centers from the Education fund, and that the funding should flow directly to CTE Centers “off the top” of the Education Fund, eliminating tuition-based funding.

With the recommendation in this report to form a single CTE district to manage career and technical education statewide, it would no longer be appropriate to direct funds to the CTE Centers. Rather, **all funding generated through the per FTE amount is recommended to go to the new CTE district**, which will be responsible for distributing funding to Centers. With the single CTE district and a single Perkins state plan, the district would have the ability to allocate federal Perkins funding along with state funding to best meet the needs of centers and students across the state. This change means that center-level budgets become a component of the CTE district’s overall budget, much like how school districts allocate funding to the schools they operate. The district would be responsible for developing enrollment policies to ensure equitable access to CTE Centers from sending districts.

The second part of the recommendation, that **funding should come “off the top” of the Education Fund, eliminating tuition-based funding, remains a recommendation of the study team**. During the Act 127 study and throughout the course of stakeholder feedback in this study, the consistent message received from stakeholders statewide was to find a way to eliminate the competitive nature of CTE funding and reduce funding disincentives to send students to CTE. By eliminating tuition payments, sending districts would no longer face the direct budgetary impact of sending students to CTE programs. In making this change, CTE funding would be distinctly different from most of the other Vermont school funding. Funding CTE off the top of the Education Fund also means all district taxpayers in the state would share in the costs of CTE, which would impact local education tax rates. It’s important to note that especially given the mix of full and part time centers, local SU/SDs may still retain some responsibility for CTE students (such as counseling, academic coursework and granting diplomas); in that case, SU/SDs should still receive some level of funding to account for the responsibilities they retain.

Funding to Increase Accessibility of CTE Centers

The first funding recommendation in the ACT 127 report related to increasing CTE Center access for students. It recommended providing additional funding and incentives or grants to create more accessibility for students whose sending high school is not on a shared campus with a CTE Center. The previous study found that students were much more likely to attend CTE if they were on a shared

campus. Aside from the previously discussed funding disincentives, transportation was identified as a key barrier to access. The funding recommendation to eliminate tuitioning is intended to reduce the competition for funds between sending districts and the CTE system, therefore **the study team no longer recommends additional incentives for students whose sending high school is not on a shared campus with a CTE Center.**

Currently, transportation to/from CTE Centers is the responsibility of the sending school district; often students transport themselves, creating potential equity issues for students without their own means of transportation. The study team **recommends that transportation should become the responsibility of the new CTE district to coordinate, rather than sending schools, and that state transportation reimbursement funding would thus flow to the new district.** This would require close coordination and cooperation with the sending schools.

Capital and Facilities Funding for CTE Centers

The second recommendation in the Act 127 report related to physical CTE facilities and said, “Create a facilities funding system for CTE programs to address current facilities deficiencies, update program equipment, address enrollment needs, and plan for the future. The system should focus on updating facilities and growing capacity for the programs most needed for workforce development in the state.” **APA strongly recommends the creation of a state facilities funding program for CTE.** With the exception of Burlington, which is currently building a new high school and career technical center due to PCB contamination, most CTE Centers were built with state funding decades ago. Many centers are in need of facility upgrades, equipment updates. Many CTE Centers report waiting lists for enrollment, but they do not have the resources to expand to accommodate increased enrollment.

Facility needs for CTE Centers are not an anomaly in the state – given the lack of state funding for school facilities, many school buildings are in need of facility updates. The AOE website has a database of school facility conditions¹¹ for all buildings statewide based on a 2022 review and the School Construction Aid Task Force reported its findings¹² on February 1, 2024. CTE Centers should be included in any school construction aid funding made available, and additional targeted funds should be made available to create or expand programs in areas aligned with state workforce priorities.

¹¹ <https://education.vermont.gov/facilities>

¹² <https://education.vermont.gov/sites/aoe/files/documents/edu-legislative-report-school-construction-aid-taskforce-2024.pdf>

Summary of Funding Recommendations

The following table provides a side-by-side of the funding recommendations from the Act 127 report with the updated funding recommendations provided in this report.

Table 7. Summary of Funding Recommendations: Act 127 Report and Current Recommendations

Act 127 Report Recommendation	Current Recommendation
<p>1. Provide additional funding and incentives or grants to create more accessibility for students whose sending high school is not on a shared campus with a CTE Center.</p>	<p>1. No longer recommending additional funding/incentives sending schools not on a shared campus. Shift responsibility for transportation from sending districts to the new CTE district; transportation funding goes to the new district.</p>
<p>2. Create a facilities funding system for CTE programs to address current facilities deficiencies, update program equipment, address enrollment needs, and plan for the future. The system should focus on updating facilities and growing capacity for the programs most needed for workforce development in the state.</p>	<p>2. Maintain this recommendation to create a facilities funding system for CTE.</p>
<p>3. Design a funding system that:</p> <ul style="list-style-type: none"> • treats all CTE equitably while incentivizing additional CTE capacity in high-growth sectors, • utilizing a weighted student funding formula that differentiates funding by CTE program type, • with funding flowing directly to CTE Centers from the Education fund, eliminating tuition-based funding. • Eliminate the six-semester FTE average for funding purposes. 	<p>3. Change in recommendation from a weighted funding formula that differentiates funding by CTE program type to a single, per CTE FTE funding amount.</p> <ul style="list-style-type: none"> • Maintain recommendation to fund CTE “off the top” of the Education Fund, spreading responsibility for CTE funding statewide • Change in recommendation from funding flowing directly to CTE Centers to having funding flow to the new CTE district • Maintain recommendation to fund solely based on 6-semester rolling average FTE, moving to a “best of” calculation

Legislation and State Board of Education Rules Impacted by Governance and Funding Recommendations

The following table identifies existing state statutes and Board of Education Rules that would need to be modified, updated, created and/or sunset to implement the governance and funding recommendations identified in this report.

Table 8. Vermont Title 16, Chapter 37 Statute Changes that May be Needed to Implement Recommendations

Subchapter	Section	Title	Change
1: General Provisions	§ 1522	Definitions	Amend to include a definition for the new district
2: State Board of Education	§ 1534	Course of study evaluation	Revise role of the "VT Advisory Council on Career Technical Education"
3: Local Career Technical Education Programs	§ 1541	Responsibility of local school boards that operate career technical centers	Amend to remove language on tuitioning, remove responsibilities transferred from local school boards to the new district
3: Local Career Technical Education Programs	§ 1541a	Responsibility of local boards in sending districts	Amend to remove language on tuitioning and shift transportation to be responsibility of the new district
3: Local Career Technical Education Programs	§ 1542	Regional advisory board	Amend regional advisory board language if requiring local center advisory boards. Repeal language if not.
3: Local Career Technical Education Programs	§ 1544	Career technical courses in other schools	Amend language to reflect the new district's role in expanding middle and high school pre-technical or CTE coursework
3: Local Career Technical Education Programs	§ 1546	Comprehensive high schools	Amend to remove language on tuitioning, reflect role of new district in distributing funds to comprehensive high schools, and amend RAB language
4: Eligibility and Tuition	§ 1552	Secondary student tuition	Amend to remove language on tuitioning and reflect a new process to determine tuition rate for out of state students attending VT centers; amend language on six-semester average enrollment count for funding
4: Eligibility and Tuition	§ 1553	Adult students	Amend to remove language on tuitioning for adult postsecondary
5: State Financial Assistance	§ 1561	Tuition reduction	Amend to eliminate state financial assistance, as it is rolled into the new base cost per CTE FTE. Replace with language describing new funding system
5: State Financial Assistance	§ 1562	Tryout classes	Repeal. State financial assistance is rolled into the new cost per CTE FTE. Replace with language describing new funding system
5: State Financial Assistance	§ 1563	Transportation assistance	Amend to reflect any transportation assistance not included in cost per CTE goes to new district

Subchapter	Section	Title	Change
5: State Financial Assistance	§ 1565	Salary assistance	Repeal. State financial assistance is rolled into the new cost per CTE FTE. Replace with language describing new funding system
5: State Financial Assistance	§ 1568	Reporting of information	Amend reporting requirement. The new district would be responsible for reporting costs, enrollment, achievement, and performance measures for all centers.
5A: Regional Career Technical Center School Districts	§ 1571	Definitions	Dissolve regional career technical center school districts. The center will become part of the new district.
5A: Regional Career Technical Center School Districts	§ 1572	Formation of a planning committee	Repeal
5A: Regional Career Technical Center School Districts	§ 1573	Approval by State Board of Education	Repeal
5A: Regional Career Technical Center School Districts	§ 1574	Vote to adopt the alternative structure	Repeal
5A: Regional Career Technical Center School Districts	§ 1575	Certification	Repeal
5A: Regional Career Technical Center School Districts	§ 1576	Effect of certification; application of other laws	Repeal
5A: Regional Career Technical Center School Districts	§ 1577	Duties and authority of Alternative Governance Board	Repeal
5A: Regional Career Technical Center School Districts	§ 1578	Regional career technical center school district meetings	Repeal
5A: Regional Career Technical Center School Districts	§ 1578a	Establishment of a regional career technical center budget	Repeal
5A: Regional Career Technical Center School Districts	§ 1579	Incurring debt	Repeal or amend to reflect how any existing debt incurred under this statute is handled in the transition to the new district
6: Postsecondary Career Technical Education	§ 1593	Secondary students in postsecondary career technical education programs	Amend to add the new district as another entity that can recommend students for postsecondary CTE programs

Table 9. State Board of Education Rule Changes that May be Needed to Implement Recommendations

Category	Topic	Section	Change
Administrative	Contracts & Partnerships	S.2373	The new district would coordinate use of centers with the Vermont State Colleges, other state programs including licensing, job training, and apprenticeship programs, and with other approved institutions for the provision of postsecondary technical education programs
Administrative	SD/SU CTE partnerships	S.2398	The new district will facilitate collaborative CTE programs between multiple SDs/SUs
Administrative	Record Sharing	S.2375	Sending schools would be required to share records for accepted students with the new district in addition to centers
Admissions	Admissions	S.2371	The new district would establish admissions criteria and policies
Approval/Oversight	Center Approval	S.2372	Amend service regions to reflect the statewide CTE district. The new district would be responsible for proposing new centers
Approval/Oversight	Change in Service Region	S.2374	The new district would determine service region(s) for CTE centers
Approval/Oversight	Program Approval	S.2375 & S.2380	Amend to reflect the new district would be responsible for approving (or revising) a technical center or high school to offer a career and technical education program
Approval/Oversight	Program Evaluation	S.2377	Amend to reflect the new district, in consultation with local administrators, would schedule technical center evaluations
Approval/Oversight	Annual Plan Approval and Fund Allocation	S.2395	Amend to reflect that the new district will be responsible for submitting an annual plan to the Secretary and will receive allocated funds from AOE
Approval/Oversight	Safety Protocol	S.2378	Amend to require the new district to develop safety programs for CTE centers/districts
Facilities	Facilities & Inventory	S.2397	Amend to reflect the new district will oversee CTE facility maintenance, use, and inventory
Financial	Tuitioning	S.2375 & S.2391	Remove language on tuitioning; update language to reflect new funding structure and funding flowing from the new district to centers
Financial	Cost sharing	S.2390	Repeal
Financial	Special education funding	S.2390	Amend to reflect the responsibilities and flow of funds for CTE students for Individualized Education Plans (IEPs)
Financial	Out of state tuition	S.2394	Amend to reflect the new district's role regarding out-of-state CTE tuition
Financial	Postsecondary CTE tuition	S.2394	Amend to reflect new district's role in funding for students participating in postsecondary CTE programming.
Financial	Transportation Funding	S.2375	Amend to reflect any transportation assistance not included in cost per CTE goes to new district
Governance	Foundational governance	S.2372	Amend language to reflect new district, its responsibility to determine service regions

Category	Topic	Section	Change
Governance	Regional Advisory Board	S. 2375	This section might be amended to reflect a single statewide CTE advisory board that has the authority to establish regional subcommittees.
Governance	Program Advisory Committees	S.2384	Amend to reflect ability to have coordinated, statewide or regional Program Advisory Committees rather than center-based committees
Staffing	Staffing Requirements	S.2379	Consider amending to require academic support staff services at all centers, and English language support staff for multilingual learners
Staffing	Salary Assistance	S.2379	Amend or repeal, as state salary assistance dollars would be rolled into the per CTE FTE amount
Workforce Alignment	Workforce Alignment	S.2373, S.2386, S.2387	Amend - the new district would be responsible for ensuring adult and K-12 CTE programming aligns with workforce needs
Workforce Alignment	Apprenticeships & Work Based Learning	S.2385	Amend to reflect the shift in approval of apprenticeships and work based learning opportunities from centers to the new district

Areas for Additional Exploration and State Decision-making

The study team recognizes that its governance and finance recommendations cannot address every potential implementation issue. Several issues are currently known but require additional exploration and/or state-level decisions to address. One key recommendation with the single CTE district is the concept of a statewide salary schedule. Although the study team reviewed existing salary schedules and conducted a survey of CTE Centers, it is unable to determine the difference between what would be required to recruit and compensate CTE teachers and the budgetary realities that have resulted in the existing salary schedules. SU/SDs also currently recognize industry experience in different ways in terms of salary placement; this should be standardized within a statewide salary schedule. Along with the salary schedule issues, some centers are able to offer additional retirement benefits to their teachers as a recruitment and retention strategy – a state-level decision will need to be made about how these additional local benefits may or may not fit into the new statewide district. Addressing these issues could positively impact CTE teacher turnover, both that of teachers returning to industry and teachers leaving one technical center for another due to compensation differences.

A state-level decision is also needed for the calculation of the out-of-state tuition rate. As some Vermont CTE Centers are the designated CTE provider for some New Hampshire school districts, out-of-state students regularly attend Vermont CTE Centers. The state should maintain the full-cost model for out-of-state students attending Vermont CTE Centers, although the exact mechanism for determining that cost will need to be outlined. Similarly, a decision point is around tuition for the independent CTE Centers; state statute currently allows independent schools to set their own tuition rates; whether that process remains or the per CTE FTE amount applies to independent CTE Centers is a decision for state policymakers.

Another decision point for the state is whether the new district will be a diploma grant entity. Under the current model, with full and part time programs, it appears SU/SDs will need to maintain diploma granting authority, so the study team has not recommended that the new district is a diploma granting entity. It is conceivable that the new district could be given diploma granting authority as well, at least for its full-time students, but that requires an additional state level policy decision around local graduation requirements and how graduation requirements are implemented in the CTE district.

Finally, for the 11 Centers that are currently part of an SU/SD, and often co-located with a high school, operating agreements will be needed in regard to the physical CTE Center facility spaces, operating and improvement costs between the new district and the host SU/SDs. The use of shared spaces (such as cafeteria, auditorium, library, parking, etc.) will also need to be addressed. The state should review the process from the formation of the four regional technical school districts and will need to determine the appropriate process to effectively and efficiently conduct this process for all Centers.

Appendices

Appendix A: CTE Design Advisory (Advisory Group) Membership

Appendix B: Vermont Governance Analysis APA NCEE memo (June 2024)

- See in particular: Mapping of CTE programs in Vermont (pages 5-8) and How Other States Staff CTE (pages 22-24)

Appendix C: CTE Finance Analysis Summary Tables

Appendix A. CTE Design Advisory (Advisory Group)

CTE Design Advisory Members, positions as of first meeting in January 2024.

Name	Position	Organization
Flor Diaz-Smith	School Board Chair	Washington Central Unified Union School District
Adam Bunting	Principal	Champlain Valley Union High School
Darren McIntyre	Executive Director	Vermont Council of Special Education Administrators
Scott Farr	Director	River Valley Technical Center
Laurie Berryman	High School Counselor	Champlain Valley Union High School
Jeff Francis	Executive Director	Vermont Superintendents Association
Melissa Connor	Director	Stafford Tech Center
Laura Nugent	Director of Special Education	Middlebury Schools
Michael Harrington	Commissioner	VT Department of Labor

Appendix B. Vermont Governance Analysis APA NCEE memo (June 2024)

Vermont CTE Governance Analysis

June 28, 2024

Augenblick, Palaich and Associates, Inc (APA) and its partners were asked to explore in more depth key issues related to recommendations from its March 2023 [report](#), organized as the following tasks:

- **Task 1:** Assess the equity and alignment of CTE program offerings across the state
- **Task 2:** Assess how CTE teacher preparation/licensure requirements and salary policies impact recruitment and retention of teachers
- **Task 3:** Benchmark AOE CTE staffing capacity and roles considering regional and center-level support needs

This memo summarizes the study team's analysis, findings, and proposed action steps. This work was based on a review of the data, benchmarking of other states, regular conversations with CTE staff at AOE, feedback from an advisory group organized by AOE, and surveys sent to CTE Center directors and newly hired CTE teachers.

Summary of Findings and Proposed Action Steps for Vermont

Task 1: Equity of access and alignment of CTE program offerings with workforce development priorities across the state.

The study team found that there are uneven opportunities for career exploration across the state and that current CTE programming does not align well with statewide priority areas. To address the alignment issues Vermont could:

- Provide more systematic early career exploration opportunities by:
 - Expanding Pre-Tech Exploratory programs that provide general career exploration opportunities to more students and more regions
 - Introducing new middle school career exploration options including virtual and summer programming
- Improve efficiency of CTE investments by:
 - Consolidating CTE programs to focus resources more efficiently
 - Discontinuing programs with consistently low student enrollment
- Streamline overlapping CTE career clusters by consolidating related programs
- Address gaps in CTE programs

Task 2: Impact of salaries and preparation/licensure requirements on CTE teacher recruitment and retention.

The study team found variation in salary among CTE Centers, as salaries are set locally, which raises recruitment issues in centers that do not pay as well as others. It was identified that there are certain industry areas where professionals can command significantly higher pay in that industry than in teaching, which has led to recruitment issues in those fields statewide. This

further restricts the pool of an already limited supply of potential applicants. However, the data collected indicated that salaries may not be the only or primary barrier to CTE teacher recruitment and retention. The state's approach to licensing also discouraged some candidates from pursuing positions and the lack of support for new teachers contributes to turnover, even though turnover remains relatively low. The study team's proposed action steps respond to the broader set of issues. Vermont could:

- Designate CTE teachers (or within certain CTE industry areas) as a “high need field” statewide and offer financial incentives as a hiring strategy
- Expand the pool of potential candidates by:
 - Designing a statewide teacher recruitment and marketing campaign
 - Allowing for part-time roles
 - Creating pathways to certify academic teachers as CTE teachers
 - Developing grow-your-own CTE teacher pipelines
- Address issues with CTE teacher preparation and licensing by:
 - Streamlining coursework and adding opportunities for self-paced progression and a more practice-based orientation
 - Strengthening mentoring and coaching of new teachers
 - Designating state funds to cover CTE teacher preparation program tuition
- Attend to CTE teacher on-going professional development needs
- Review licensure test data to better understand where CTE teacher candidates are struggling and design ways to better support them
- Address inequities in the retirement system based on years of service, due to the majority of CTE teachers not entering teaching until later in their careers

Task 3: Benchmark AOE CTE staffing capacity and roles considering regional and center-level support needs.

The study team identified the following issues with how CTE is currently staffed in Vermont:

- The state has minimal staffing capacity and authority
- The CTE system does not coordinate CTE investments with state workforce and economic development goals
- Center staffing models and capacity levels vary as does their capacity to provide high-quality programming
- Functions that could be shared across centers, such as curriculum and teacher professional development, are not

How This Memo is Organized

This memo is organized in the following sections:

- Background Information for the Analysis
 - How CTE is Organized in Vermont
 - Vermont Policies Regarding CTE Teacher Salaries
 - Vermont CTE Teacher Preparation Program Structure
 - Vermont CTE Teacher Licensure Requirements
- For Each of the Three Tasks
 - The approach to the work
 - Findings based on the research and analysis
 - Proposed action steps

Background

How CTE is Organized in Vermont

CTE is offered to students in grades 11-12 in 17 CTE Centers (including Lyndon and St. Johnsbury which are private) plus two public high schools (Missisquoi and Canaan) across the state. Neither of the two high schools receive Perkins funds as they do not qualify for them due to limited program offerings or insufficient student enrollment. Some CTE Centers and high schools also offer Pre-Tech Exploratory and Foundation courses, which offer career exploration opportunities for students in grades 9-10. Pre-Tech Exploratory courses are intended as an introduction to all CTE programs at a regional CTE center and must run an average of 2 hours per day. Pre-Tech Foundations introduce occupations in a specific career cluster area and must run at least 40 minutes per day. Total enrollment in the three program options in fall 2023 was 4,743 which included:

- 3,322 CTE students
- 1,143 Pre-Tech Foundation students
- 278 Pre-Tech Exploratory students

According to the AOE website, CTE Centers are authorized to provide programming in 16 broad career clusters, although only 15 are currently offered (no Government and Public Administration). The AOE approves CTE programs as proposed by local regions but does not have the authority to propose programming in particular industry areas. This means there is currently no mechanism for aligning CTE with state workforce goals; local assessments of need are the main determinant of programming. There are currently 58 state programs offered in these clusters. This is based on looking at [six-digit CIP codes](#) as defined by the National Center for Education Statistics which allow analysis of content of programs. ^[66]

Vermont Policies Regarding CTE Teacher Salaries

In Vermont, like in almost all states, CTE teachers are required to have work experience in the occupational area they teach in, which means teachers are recruited after working and building expertise in a particular industry. Most CTE teachers are second career teachers and do not have teaching credentials upon hiring. Additional key information about teachers in VT includes:

- Some CTE teacher candidates have an AA or BA degree, but many do not.
- The mean wage for teachers in Vermont is \$68,080 which is slightly higher than the [mean wage for CTE teachers](#) nationally which is \$67,610. Vermont CTE teacher salaries are higher than in neighboring states Maine and New Hampshire, but substantially lower than New York and Massachusetts.
- CTE teachers in Vermont earn slightly higher than the average for all teachers in [Vermont](#): \$62,866. Vermont's average teacher salary is slightly below the national average of \$66,745.
- CTE Centers are required to hire directors. Each center determines its director's salary; salary assistance for directors is provided by the state.
- The salary of CTE teachers, like other educators, is set locally; there is no state policy in this area. CTE teacher salaries are determined by union contracts which are negotiated locally. The contracts set a starting salary and increments above that related to experience. The starting salary and the increments for experience vary by region. Some contracts give Center directors or district superintendents authority to adjust salaries.

Vermont CTE Teacher Preparation Program Structure

There is one CTE teacher preparation program in the state at Vermont State University (VSU) known as the CTTEP (Career & Technical Teacher Education Program). CTE teachers are hired with apprenticeship licenses and begin working as teachers while completing the program. Each year typically between 15-20 candidates begin the CTTEP program as a cohort to complete the requirements as a small group. (There is no option for starting mid-year.) To qualify for enrollment in the program, applicants must be either:

- High school graduate with at least six years of experience in the desired trade, or
- Holder of AA degree or higher with four years of work-related experience.

CTTEP is a four-year program with 10 courses (24 credits) conducted over two summers and generally one Saturday a month with some virtual sessions. Of the 10 courses, one is a capstone/portfolio development, and one is a teacher externship. The program includes a special education course, which is unusual for CTE teacher programs. The study team was told that Vermont includes this course because 30%+ of CTE students are designated as needing special education services. The focus of the course has shifted over time, from practical strategies for teaching special education students to more theory, which not all teachers find helpful. The CTTEP director also reported that staff make efforts to give credit for relevant coursework or experience to allow candidates to place out of courses and accelerate completion. In addition to coursework, some coaching is provided. CTTEP staff visit CTE Centers to observe CTE teachers four times (usually at the beginning and end of years 1 and 2 in the program).

Candidates can earn credit for a BA or MA by completing the CTTEP program, but not enough to get a full degree. The tuition cost is approximately \$10,000-12,000 per candidate. (In addition to tuition, CTE Center directors pay a \$175,000 annual fee using Perkins funds to the Vermont Association of Career and Technical Directors (VACTED) to organize and provide the CTTEP program.) Many Centers cover the full cost of the preparation program for candidates, about half only cover part of it. These centers pay the rate of UVM's credits for 3-6 credits or about \$2,000-4,000 total. This leaves much of the cost obligation on the teacher candidate. In addition, Centers often use a reimbursement model, which may require long periods to process.

Vermont CTE Teacher Licensure Requirements

There are three requirements for CTE teachers to earn a Level 1 teaching license:

- Complete CTTEP preparation program with at least a B in each course
- Receive approval on Vermont licensure portfolio
- Pass Praxis Core exams (reading, writing, math. Vermont uses cut scores on the Praxis that are [on par](#) with what is required in most states: Reading 156; Writing 162; Math 150. There is a Praxis preparation course candidates can take at VSU if they want extra support. Since 2021, candidates can now [pass](#) an “equivalent exam.”

In an effort to make the assessment requirement of Praxis more flexible, Vermont has made some recent changes in its regulations to allow for alternative demonstrations of basic skills as follows:

- Candidates can substitute in scores from other tests, including SAT, ACT, GRE, AP exams, or the ASVAB (primarily used by the military). The state will also consider other assessments on a case-by-case basis.

- The state may also honor evidence of successful completion with a grade of B or higher in relevant college level coursework.
- Finally, if a candidate does not pass the Praxis Core and does not have any of the above test or coursework substitutes, the preparation program or district can request a waiver through the multiple measures policy which provides some additional leniency in scoring paired with either an alternate assessment or evidence of content-based support provided by CTTEP.

Task #1: Examine current distribution of CTE programs across the centers and consider how programming might be adjusted to improve equity of access for students and align with state workforce goals.

The Approach

The study team analyzed data provided by AOE on Pre-Tech and CTE offerings (by career cluster, program, and center) to assess student access to these learning opportunities. A deeper dive into the specific programs offered within each cluster and looked at student enrollment by program was also undertaken

The study team interviewed Jay Ramsey, the Director of Workforce Development at the Vermont Department of Labor (DOL) to help identify which industries to use to assess the alignment of CTE programming with the state's economic development priorities. Finally, information was gathered about how other states, especially more rural ones, seek to expand access to CTE programs and approaches taken to incentivize local areas to provide CTE programming that aligns with priority economic and workforce goals for Vermont to consider.

This task is divided into two analyses: Analysis #1: equity of access to CTE programming statewide and Analysis #2: alignment of CTE programming with state workforce goals.

Task 1 Analysis #1: Equity of Access CTE Programming Statewide, Findings

Separate analyses of Pre-Tech and CTE offerings and student enrollment by program were undertaken.

Pre-Tech Programs

- 11 out of 19 CTE Centers/high schools offer Pre-Tech Exploratory which provides a general overview of CTE and career exploration; students earn academic credit, and the program integrates academics. These programs are a minimum of 2 hours each day.
- 11 out of 19 CTE Centers/high schools offer Pre-Tech Foundations which focus on particular clusters; these programs are typically shorter and generally are about 40 minutes and last only one semester.
 - The most common Pre-Tech Foundations programs are in Architecture and Construction and Agriculture, Food and Natural Resources. These each enroll 217 students (or 18.5% of total PTF enrollment).

CTE Programs by Cluster

- A map of career cluster distribution by CTE Center is provided as Attachment A.

- On average, CTE Centers/high schools offer programs in nine of the 15 career clusters.
- If Missisquoi is excluded, which only offers programs in one cluster, CTE Centers/high schools offer a minimum of 5 (Canaan) and a maximum of 11 clusters (Essex, Hartford, North County, River Bend, Stafford, and Southwest Vermont).
- The four most common clusters offered are:
 - Architecture and Construction
 - Health Sciences
 - Manufacturing
 - Transportation, Distribution and Logistics
- Five clusters are offered in fewer than half CTE Centers/high schools:
 - Education and Training
 - Information Technology (IT)
 - Science, Technology, Engineering & Math (STEM)
 - Marketing, Sales, and Service (offered at only two Centers)
 - Finance (offered at only one Center)

CTE Student Enrollment Patterns

Cluster headings are broad, so it is important to look at what programs are nested under each as they do not always correspond to the full range of industries covered in the heading. The AOE staff cautioned our study team that they are in the process of removing and consolidating program CIP codes because the distinctions within a particular industry area are not always helpful. Ideally, program codes and names would accurately convey the content taught, this is not always the case as local centers design their own programs and there is sometimes significant variation across regions in the content of programs with the same codes. The state does not have common curriculum and the AOE lacks the staff capacity to ensure consistency in programming across centers. We did not review program curricula as part of this analysis.

As shown in Table 1 below, the analysis of student enrollment by program area finds that:

The four clusters with the highest percentages of CTE student enrollment statewide are:

- Architecture and Construction
- Transportation, Distribution and Logistics
- Health Sciences
- Arts, AV Technology and Communications
- The four clusters with the lowest percentage of CTE student enrollment statewide are:
 - Marketing, Sales, and Service
 - Finance
 - Information Technology
 - Education and Training
- At the program level, there are 18 programs (across 13 Centers) with five or fewer students enrolled. There is no discernable pattern as these are scattered across 11 cluster areas.

Table 1: Career Cluster Programs and Enrollment

Career Cluster	Percent of Total CTE Enrollment	Number of State Programs Within the Cluster	Student Enrollment Patterns
Architecture & Construction	14.6%	4	Over 80% of enrollment is in construction, carpentry, or electrical programs. The other programs are in plumbing and HVAC. There are no architecture programs.
Transportation, Distribution & Logistics	14.3%	6	95% of student enrollment is in auto body collision repair, automotive technology, diesel mechanics, and heavy equipment programs; very few students are in aviation; none are in distribution or logistics.
Health Science	12.9%	5	Most students are enrolled in general health sciences programs, although some of those programs do include options to earn credentials (typically medical assisting or LNA).
Arts, A/V Technology & Communications	11.2%	7	The majority of enrollment is in digital arts and graphic design.
Human Services	10.2%	2	58% of student enrollment is in cosmetology programs; fewer than half of students are in human services programs.
Agriculture, Food & Natural Resources	7%	9	Most students are enrolled in forestry programs, followed by agricultural programs.
Hospitality & Tourism	6.8%	3	All students are enrolled in culinary arts and restaurant programs; there are no programs on broader hospitality or tourism.
Manufacturing	6.7%	4	The majority of enrollment is in welding, HVAC, and machining. Some programs have more focus on design, engineering and fabrication.
Law, Public Safety & Security	4.3%	4	The majority of students are enrolled in criminal justice programs.
Business Management & Administration	3.4%	1	All students are enrolled in business management and administration programs.
Science, Technology, Engineering & Math (STEM)	3.0%	2	Enrollment in Pre-Tech Foundations exceeds enrollment in CTE programs in this cluster. The majority of students are enrolled in engineering programs. There appears to be some overlap with the manufacturing cluster.
Education & Training	2.6%	3	Only 86 students are enrolled in education programs: 45 in a general education category, 35 in early childhood education, and 6 in outdoor recreation. There is no Pre-Tech Foundations offering in this cluster.

Career Cluster	Percent of Total CTE Enrollment	Number of State Programs Within the Cluster	Student Enrollment Patterns
Information Technology (IT)	2.4%	6	Total enrollment is 80 students spread across 7 programs with diverse titles ranging from cybersecurity to software engineering to game design. There are only 5 students in a single Pre-Tech Foundations IT course titled “Introduction to Engineering” which indicates some overlap with the STEM cluster.
Finance	0.2%	1	There are 8 students in total in one accounting and finance program. Pre-Tech Foundations is not offered in this cluster.
Marketing, Sales & Service	0.2%	1	There is only one program in marketing, sales and service which is part of a business program and serves only 5 students. There is one Pre-Tech Foundations program in this cluster with 28 students.

Proposed Action Steps

Given that access to Pre-Tech and CTE programming is uneven across the state and that there is low enrollment in some programs, Vermont might consider taking steps to: 1) ensure more equitable student access generally, 2) improve efficiency in CTE investments, and 3) streamline overlapping CTE career clusters. A discussion of suggested changes in specific CTE offerings is in the next section: Task 1 Analysis #2.

Provide Earlier Career Exploratory Opportunities Through the Use of Technology, Summer Programming, and Other Delivery Methods

The study team suggests that more could be done to ensure that younger students are introduced to CTE offerings and have authentic opportunities to experience CTE before making decisions about their pathways in high school. Specifically, the state could:

- Expand Pre-Tech Exploratory to more regions of the state to assist students in career exploration
- Review current Pre-Tech Foundations programs and expanding those that are high-quality and help students get an earlier start in building key skills and competencies in a career area of interest
- Introduce new middle school career exploration options

While space is limited in some CTE Centers and transportation is an issue in many areas, there may be some creative solutions such as:

- Using technology to provide digital learning and other virtual opportunities. This is a strategy used in other rural states. For example, Idaho’s Digital Learning Alliance, Launch Missouri, and Virtual Arkansas. These [three states](#) chose to focus initially on career areas most conducive to online learning, such as IT, business management, and finance.
- Expanding middle school career exploration opportunities (this could include intro courses, career days, and after school and summer programs) to allow students to learn about and try out CTE programming

- Some possible models are a summer camp [program](#) for CTE in Charles County, MD or the Madera, CA semester long career [exploration](#) for 8th graders where students learn their core middle school subject in a career context.
- Basing Pre-Tech programs at the home high schools with visits to the CTE Centers. There are currently a few examples of these (Hannaford and Burlington), but the model could be expanded where space allows.
- Involving current CTE students in helping to introduce younger students to the programs by having them visit middle schools, host students at the CTE Centers, etc.

Improve Efficiency in CTE Investments

The study team see two areas where AOE might want to consider changes:

- Consolidate CTE programs to focus resources more efficiently. For a small state, Vermont offers a wide range of CTE programming. There is some question as to whether the state needs 58 distinct programs to serve 3,300 students. As a comparison, Tennessee has 900,000 K-12 students, ten times greater than Vermont's, but only has 56 CTE programs. One strategy might be to create clusters of programs with common initial requirements, with options for specialization within those.
- Discontinue programs with consistently low enrollment rates. It does not make sense to invest scarce personnel and space resources in programs that serve only a small number of students. The current minimum is seven, but the state may want to raise this number and have more flexibility to decide how to allocate resources. This is an area where digital technologies might be employed to bring virtual opportunities to students in other areas not served by particular programs or clusters.

Streamline Overlapping CTE Career Clusters, Distinguish Distinct Industries, and Expand Underdeveloped Areas

The Marketing, Sales and Service; Finance; and Business, Management and Administration, and Finance cluster have very low enrollment and overlapping programming. The state might revamp and streamline these clusters. This is also a cluster of programs that have the potential to be taught online or in home high schools which could expand access. When combined these only represent 3.8 percent of CTE student enrollments.

The state might separate cosmetology from family and community services in the Human Services cluster, as they are distinct industry areas with separate CIP codes. Currently, more students are enrolled in cosmetology than other types of human services programming. Since family and community services jobs such as counselors and social workers are in greater demand in the labor market, the state might want to prioritize their expansion as those programs are currently underdeveloped.

Task 1 Analysis #2: Alignment of CTE Programming with State Workforce Goals, Findings

The study team used the [Vermont WIOA draft plan 2024-28](#) as a source for state workforce development priorities, as goal 2 of that plan names seven high-demand industries critical to Vermont's success over the next decade: construction (for housing), broadband access, climate resiliency, transportation infrastructure, childcare, education, and health care. There are two categories of need:

- Industries that support the current workforce: construction (for housing), childcare, and health care
- Industries that support state infrastructure: broadband access, climate resiliency, education, and transportation infrastructure.

The study team based its initial analysis on alignment between these priorities and current CTE programming (see Table 2 below). A few notes:

- Early Childhood Education (subset of Education and Training) was used as a match for childcare.
- Electrical Technology in the Construction cluster was used as a match for Broadband Access because the infrastructure line work is fiber optics.
- For the Transportation Infrastructure category, the study team did not see many relevant programs. Only one of the Transportation cluster programs in aviation is focused on aircraft mechanics, the other is pilot training. The other programs in that cluster are in automotive tech, which is not related to developing the state’s transportation infrastructure. There are currently no programs in road and rail construction and logistics in any cluster.

Table 2: Alignment Between State Workforce Priorities and CTE Programming

	Industries That Support the Current Workforce			Industries that Support State Infrastructure			
	Construction	Child Care	Health Care	Broad-band Access	Climate Resiliency	Education	Transportation
Number of Centers Offering CTE Programs in This Cluster	16	2	16	1	0	5	0
Number of Students Enrolled	485	35	430	101	0	45	0
Percentage of CTE Student Enrollment Statewide	14.6%	1%	12.9%	3%	0%	1.4%	0%

The study team identified major gaps in five of the seven industries identified as priorities for the state by DOL, all of which have at most 3 percent of students in the CTE pipeline:

- Climate Resiliency
- Childcare
- Education
- Broadband access
- Transportation

A map of career cluster distribution by CTE Center is provided as Attachment B. It shows that of the seven state workforce priorities, the maximum offered by any CTE Center currently is five.

Proposed Action Steps

Both short-term steps and a long-term strategy are offered for the state to consider.

Short-Term Steps

To address the gaps identified above, the state could immediately:

- Expand Pre-Tech Foundations to help students understand the job and career opportunities available in these fields, both within Vermont and nationwide. There are currently no Pre-Tech Foundations offerings in Education and Training (this is also true for Finance, the only two industries with no Foundations programming)
- Develop a plan for expanding CTE programming in the industry areas highlighted in the WIOA plan to more CTE Centers/high schools across the state.
- Revamp marketing of CTE programs to students and parents by sharing data on priority industries for the state and high growth, high demand jobs and linked CTE programming.
- Consider using virtual CTE learning options to help expand access. This is a strategy that will likely work better in some industry areas (and for some students) than others. But given the trends towards digitalization and access issues in a rural state, Vermont should begin investing in technology for CTE.
- Provide incentives for regions to build new CTE programs focused on state priorities.

The study team also suggests additional specific actions by industry area:

- Information Technology (IT): Review the curriculum to make sure it is up-to-date and that students are getting exposed to key skills such as coding and cybersecurity that are needed in the field in general as well as represent skills required to support the state's Broadband access goals.
- Climate Resiliency: Do an analysis of the specific jobs and occupational skills needed to succeed in jobs of the future, which might include research, biotech, urban planning, green engineering and tech, sustainable farming, etc. It may be that some of these key skills could be incorporated into existing CTE programs or that new programs might need to be developed.
- Construction: While this is already available at 16 CTE Centers/high schools and was not identified as facing an immediate gap, the state might expand the number of seats available to account for the fact that construction skills are needed in both the area of housing for the current workforce and transportation infrastructure for the state.
- Transportation: Review the current set of programs in this cluster and consider getting input from the Transportation Authority about the skills needed to staff road, rail and airport construction and logistics.

Long-Term Strategy

The study team suggests Vermont consider building a stronger capacity to tie its CTE system better to the goal of building a sustainable and vibrant economy for the state. To do this, it would need to:

Identify a Set of Industries Critical for VT's Future: The Vermont Department of Labor (DOL) and the Department of Economic Development (DED) might identify a high-demand career list and industries critical to the state's future in a fast-changing, tech-driven global economy. For example, Vermont might consider what role technology (especially AI) might play, given that this will transform key industries like advanced manufacturing, communications, health care, transportation, and others. The final set of priorities should be communicated broadly to the workforce community, including CTE and postsecondary, and the public. And Vermont should develop a process for renewing the list on a regular basis. [Georgia](#) requires its state Workforce

Development Board to develop, approve, and annually publish a high-demand career list identifying those careers most critical to the state's current and future workforce needs.

Ensure that CTE Programming is Updated and Responsive to Changing State Economic

Goals: The study team offers two state examples for AOE to consider.

- [Indiana](#) has made efforts to better align CTE with state in-demand job needs by ranking occupational areas using data on immediate job openings, long-term projections of job openings, and wages to sort into six categories: high value (levels 1 and 2), moderate value (levels 1 and 2), and less than moderate value (levels 1 and 2). This is done by Indiana's Department of Workforce Development in consultation with the Governor's Workforce Cabinet to inform CTE designations. The high value Level 2 (the top category) includes career areas such as biomedical, computer science, advanced manufacturing robotics, pre-nursing, engineering, and precision agriculture. The state uses a differentiated funding formula to reimburse districts by student enrollment in programs, awarding more than \$1,000 per credit hour for the highest value programs and only \$200 for the lowest value programs.
- Delaware chose to balance local control of CTE with a need to serve statewide economic interests and provide a pipeline of talent for growing industries by creating state-level CTE programs in key areas such as finance, IT, health care, and advanced manufacturing. Each of these state-level "Pathways" programs offers students the opportunity to earn an industry-recognized credential, early college credit through the state's technical college system, and relevant work experience. The state now supports about two dozen Pathway programs and has seen a major expansion in CTE student enrollment (over 50% of high school students), higher rates completion of advanced academic and technical coursework, and higher rates of postsecondary enrollment.

Incentivize the Expansion of CTE Programs in the Identified Priority Industries: Options include having AOE develop state-level CTE programs of study (like the Delaware Pathways model) and offer regions financial incentives to implement them (like the Indiana approach) or provide a competitive grant supporting the expansion of high-priority programs (new or existing) to ensure more even distribution across the state.

Analyze CTE Program Alignment and Linkages to Postsecondary Education/Training: CTE graduates will likely need to earn postsecondary credentials and degrees to access high-skill, high-wage positions. Once Vermont has identified a set of priority industries, the state should analyze postsecondary programs to evaluate their alignment with CTE programs of study and develop career pathways that provide students with a set of stackable credential options matched with jobs in that industry area, which may require legislative action.

Final Note About Coordination Within AOE

One final observation about the state's Flexible Pathways initiative which includes CTE and a new effort around Career Pathways with a focus on "aligning school program offerings to the skill needs of key industries in Vermont's economy." Four industry areas are cited as priorities: Advanced Manufacturing, Cybersecurity, Construction, and Health Science. Given the recommendations in this area, the study team has some concerns about potential duplication of efforts across these two initiatives. For example, it is not clear if these industry areas remain current priorities, how the state is tracking progress in developing career pathways, and how this work connects with CTE more broadly.

Task #2: Review CTE teacher preparation and licensure requirements and salary policies to assess impact on recruitment and retention of high-quality CTE teachers.

The Approach

The study team surveyed CTE Center directors (by email) to understand CTE teacher hiring practices, salary structures, and any perceived barriers to recruitment and retention of effective CTE teachers. Additionally, newly hired CTE teachers were surveyed to hear their perspectives on how teacher preparation program costs are handled.

The study team examined available information on the state's CTE teacher preparation program (CTTEP) and researched state policies on teacher salaries and licensure requirements. Interviewees included Amy Bohren, Director of CTE Education at Vermont State University (VSU), who oversees CTTEP to get her perspective on the CTE teacher candidate experience and if she saw any needs for changes to the program structure and/or candidate supports. In addition, information was gathered about how other states address salary, preparation, and licensing to provide examples and options for Vermont to consider. To learn more about changes the state made to help onboard and support CTE industry experts as they transitioned into teaching roles, Tim Withee of the Career and Technical Education Consortium of States (CTECS) and Dr. Bob Couch, the former CTE state director of South Carolina were interviewed.

This task is divided into two sections: the impact of current salary policies on CTE teacher recruitment and retention and the impact of teacher preparation and licensure requirements on CTE teacher recruitment and retention.

Task 2 Analysis #1: The Impact of Salaries on CTE Teacher Recruitment and Retention, Findings

Overall, in Vermont as elsewhere in the US, there is a small pool of experienced professionals who are interested in transitioning into CTE teaching. The pool of available talent varies by industry area. CTE Center directors reported shortages of qualified candidates in industry areas such as aviation, advanced manufacturing, the building trades, and automotive. In some cases, Centers have long standing vacancies because they haven't been able to recruit effectively. According to the survey analysis:

- The CTE Centers reported starting salaries ranging from the low \$40,000s up to around \$60,000. There is wide variation based on the Center's teaching contract stipulations plus the years of experience and/or academic degrees and industry credentials the candidate brings to the job.
- Some CTE Centers report challenges in hiring mid-career professionals citing teacher salaries which are often lower than what they might earn in the private sector, especially in the trades, advanced manufacturing, or information technology where expert technicians can demand higher pay. Others did not report pay as a hiring issue.
- All the CTE Centers honor years of work experience on their teaching pay scales, so CTE teachers are not generally hired at the lowest salary level. Most recognize 2 years of work experience as the equivalent of 1 year of teaching. Four centers use a 1:1 ratio.

- The one exception is Northwest Career Center that does not honor years of work experience. Instead, it offers an annual stipend of \$1750 to teachers with industry recognized credentials.
- Some Centers shared their efforts to offer additional enticements such as discounted childcare or use of Center facilities and equipment off-hours. Others described how they are broadening their recruitment messaging to attract a wider pool of potential candidates, using social media and trade organizations.
- Two Center directors cited higher-paying regions hiring away staff as a challenge in the survey.
- Promotion is generally based on academic degrees, but some Centers reported using industry credentials as a way to move along the salary grid.
- In general, CTE Center directors did not report high turnover rates. Most CTE teachers appear to stay until retirement, although if they do leave it is more likely they return to industry where they could earn a higher pay rate rather than moving into a teaching position in another district.

In the analysis of other state's policies in this area, South Carolina's approach is potentially useful to consider. While not a statewide policy, some school districts in South Carolina start CTE teachers with certain high-level industry credentials (such as master plumber, registered nurse, etc.) on the master's degree pay scale and equate one year of industry experience as one year of teaching. Schools in South Carolina reported difficulties attracting industry experts who could command a higher salary in the private sector, especially in manufacturing. Finding ways to raise CTE teacher salaries and/or provide stipends for taking on additional responsibilities has helped make teaching a more attractive job.

Proposed Action Steps: CTE Teacher Salaries

Designate CTE teachers (or certain CTE industry areas) as a "High Need Field" Statewide and Offer Financial Incentives as a Hiring Strategy

The state could designate CTE teachers as high-need overall or identify particular industry areas where there are CTE teacher shortages and provide statewide financial incentives such as differential pay or bonuses to help attract new CTE talent. This is a policy commonly used in other states. For example, [one district in Tennessee](#) offers a signing bonus to CTE teachers in particular industry areas as well as an annual retention bonus.

Honor Advanced Industry Credentials

Similar to South Carolina, the state could place CTE teachers with advanced industry credentials—particularly in industry areas where it is challenging to find qualified experts—on the same pay scale as if they had a master's degree.

Expand the Pool of Potential Candidates

There are several strategies the state could consider broadening to pool of potential CTE teacher applicants:

- **Design a Statewide Teacher Recruitment and Marketing Campaign:** The state could organize a marketing strategy to attract talent and highlight the benefits of working as an educator. This could be done for K-12 teachers in general or targeted to CTE industry professionals who may not realize they could transition into a second career opportunity that would allow them to continue to apply their skills and expertise to train the next generation.

- Allow for Part-Time Roles so Professionals Could Both Work and Teach: A number of states allow technical workers to teach part-time, including Alabama, Florida, Kentucky, North Carolina, Ohio, and Virginia.
- Create Pathways to Certify Academic Teachers as CTE Teachers: New Jersey developed a pilot program called CTE Teacher Bridge that trains and certifies general education teachers in subjects like math or science to lead CTE programs in priority industries. Interested teachers participate in industry externships, mentorships, and opportunities to earn industry certification to equip them to transition to CTE disciplines. NJDOE pays teachers a \$2,500 stipend for completion of 160 externship hours.
- Develop Grow-Your-Own CTE Teacher Pipelines: Several states, such as New York for example, have created new CTE teacher pipelines by connecting CTE teacher programs with apprenticeship opportunities that includes industry experience, classroom teaching under the supervision of a teacher mentor, and pedagogical instruction in the college courses necessary to be licensed as a CTE teacher. States are allowed to use Perkins V State Leadership funds for grow-your-own teacher initiatives, but Vermont's allocation is quite small, and would require the state to find a new funding source to support AOE CTE staffing.

Task 2 Analysis #2: The Impact of Teacher Preparation and Licensure Requirements on CTE Teacher Recruitment and Retention, Findings

Some CTE Center directors reported that potential hires may be discouraged by the CTTEP preparation program model which was described as:

- Too long and inflexible. The four-year model offers no opportunity for self-paced instruction to allow candidates to move through the courses more quickly. The cohort model has clear benefits, but because each year's candidates must start in the summer, there is no opportunity for new teachers to start their preparation mid-year.
- Too theoretical. Some industry professionals struggle with the traditional classroom format and emphasis on instructional theory rather than practice.

A survey was sent to approximately 85 newly licensed CTE teachers to collect feedback on their experiences. A total of 41 responses were received (a 48 percent return rate) from teachers representing every CTE Center in the state except Burlington. The surveys confirmed that CTE Center policies regarding cost coverage for teacher preparation vary widely. While 68 percent of teachers reported that their center paid for CTTEP coursework, there was generally a limit on what was covered, and cost coverage was not consistent for the four-year program of study.

Teachers reported that Center policies on what would be paid for were not always presented clearly nor consistently. Some respondents said policies cover only certain courses; a maximum number of courses or credits, overall or within a certain time period; a maximum dollar amount; an amount based on a lower graduate course rate at UVM; or a percentage of the total program cost. This was confusing for new CTE teachers who are responsible for covering the balance of the costs. Five teachers said they were unsure about the exact policy details when asked.

While two-thirds of respondents said the Center makes payments on their behalf, many of the remaining third of teachers must request reimbursements, which may require providing proof of payment and evidence of success in the course, usually with a B or better in the class, such as

transcripts or final grades. A few teachers were unsure about the exact standard required to receive reimbursement.

Seventy percent of survey respondents said they felt they were given a solid explanation of the CTTEP program courses and requirements when they were hired. Program costs were less understood; only 43 percent felt the cost structure and reimbursement process was explained clearly. Many teachers said they still had questions even after being hired and enrolled in the CTTEP program and wished they had gotten more details about the costs and reimbursement options upfront. Because CTE teachers are typically industry professionals making a career change, they would benefit from much greater clarity and support as they transition into teaching roles while undergoing required training.

In addition to structural challenges, there is some concern that new CTE teachers need more consistent and frequent coaching to help them onboard successfully. The study team found that:

- CTE teachers only have 4 days of coaching observations from CTTEP staff over the course of the four-year program
- At most, but not all Centers, CTE teachers are assigned a district coach/mentor who meets with them periodically.
- In comparison, Vermont academic teacher candidates get 13 weeks of ongoing school-based mentoring as part of their practicum.
- CTTEP does have plans to implement a more frequent and structured coaching/mentoring model with 8-9 sessions in years 1-2 to help CTE teachers apply what they learn in their courses to classroom practice. However, those mentors would still not be school based.

South Carolina provides a useful model. The state revamped its [CTE teacher training program](#) and organized it in two phases of coursework that occurs while they are on the job. The first phase of certification, two years, consists of four courses designed to prepare industry experts to teach: Methods of Teaching, Classroom and Laboratory Management, Curriculum, and Assessment. Each course is 4-5 days; new CTE teachers can choose to take courses on Saturdays during the school year or during the summer. There are several different cohort starting dates to accommodate ongoing hiring.

This phase also includes mentoring from an experienced teacher in a related industry field that is organized at the state level. The mentor is expected to observe the new CTE teacher in the classroom and provide feedback on instructional methodologies, effective teaching strategies, classroom management, lesson plan design, and student engagement. In addition to the industry-specific mentoring support, new CTE teachers are also assigned a mentor at their school to provide more general teaching support.

The second phase of certification coursework, years three to five, requires new CTE teachers to complete two additional courses chosen from four options: psychology, technology integration in the classroom, reading and writing in the content area, and children of poverty.

The entire preparation program is provided at no cost. Once new CTE teachers have completed the coursework and passed the required examinations within the five-year period, they are awarded a professional work-based teaching certificate.

Proposed Action Steps: CTE Teacher Preparation

There are three areas of teacher preparation where the study team suggests review: course structure, mentoring supports, and the provision of tuition funding.

Streamline Course Structure and Add Opportunities for Self-Paced Progression and a More Practice-Based Orientation

While CTTEP does give candidates credit for relevant coursework or experience, Vermont State University, in partnership with VACTED and AOE, might want to do a more thorough review of the program to see if there are opportunities to streamline and/or restructure it to make it more flexible and more connected to the classroom as CTE teachers are already in front of students. Some possible options include:

- Allowing the portfolio and observation tasks to be completed on a more flexible timeline and perhaps as part of the expectations of other courses.
- Integrating the Special Education course content into another teaching course.
- Structure the program as a mix of self-paced courses and cohort-based courses; this would allow more flexibility in starting new cohorts of students.
 - As an example, Mississippi created its [New Teacher Induction](#) (NTI) program to help industry professionals transition into a CTE teacher role during a special licensing period (similar to Vermont's). The program is made up of in-person and virtual sequenced coursework plus incorporates industry-specific mentoring from effective CTE teachers. Notably, it was initially organized as a three-year model, but the state [condensed it to one year](#) based on CTE teacher candidate feedback. [Oklahoma](#) has also developed a new teacher institute that provides a full year of training, coaching, and mentoring for new CTE instructors.

Strengthen Mentoring and Coaching of New CTE Teachers

Vermont might consider strengthening mentoring and coaching of new CTE teachers.

The study team sees three important areas:

- General classroom management and instructional support: New teachers need guidance and support from experienced professionals in how to effectively lead and manage classrooms and evaluate student learning.
- Industry-specific teaching guidance: While CTE teachers have expertise in their fields, they need guidance and support from experienced professionals in how best to relay their knowledge and skills and bring in real life examples and hands-on learning opportunities to the greatest extent possible.
- Understanding how CTE Centers work: Industry professionals do not have school experience and need to be introduced to CTE Center leadership structures, policies and practices.

A more coordinated approach to providing these three levels of support may be helpful. Depending on CTE Center capacity and staffing, this ideally would be provided at the worksite which would ensure CTE teachers have a mentor onsite and available. An academic or a CTE teacher could provide the first level of support. Ideally AOE or CTTEP would provide the second level of support through a professional learning community of teachers in that cluster area. And the CTE Center director or another administration could provide the third level of support.

Designate State Funds to Cover CTE Teacher Preparation Program Tuition

The study team suggests that the state consider covering CTE teacher preparation tuition in full using state Perkins funds particularly if the state chooses to centralize governance of the CTE system. According to the survey, ten CTE Centers cover all costs and the rest cover at least some. This shift would cover all teachers equitably, simplify transactions and the licensing process for new CTE teachers.

Proposed Action Steps: CTE Teacher Licensure

Finally, the study team offers three additional suggestions regarding CTE teacher licensure and steps the state might take to help retain CTE teachers: review licensure test pass rate data to identify and address barriers to entry, provide ongoing CTE teacher professional development, and consider if changes are needed to help improve CTE teacher access to retirement benefits.

Review Licensure Test Data to Understand Where Teacher Candidates Might be Struggling

The study team was provided some data but did not get a clear picture of how much CTE teacher candidates struggle to achieve the required cut scores on the Praxis exams (or the alternative options and measures available) as a requirement of licensure. Available data shared with the study team on Praxis pass rates over the last few years showed no clear pattern and there was no discernible what percentage of teachers were taking the test multiple times, those that ended up using alternative measures, or if some teachers never fulfilled this requirement and therefore were not licensed. This is an area AOE and VSU/CCTEP might want to look more closely at to understand if teachers are struggling in particular subject areas and what supports might be offered.

Expand and Make More Accessible Ongoing CTE Teacher Professional Development

As a teacher retention strategy, Vermont should think about ways to support the professional growth of CTE teachers to continually expand their knowledge and improve their practice. This can take the form of regular in-service training, professional learning communities, informal collaboration between teachers, self-directed learning, and externship opportunities. There is a strong foundation with current TEC meetings and CTE summer conferences, but the lack of a common calendar and a shortage of substitutes impacts the ability of some teachers to attend.

Address Inequities in the Retirement System Based on Years of Service

The advisory group noted that because most CTE teachers do not enter teaching until later in their career, they are often not eligible for retirement benefits. The state might consider adjusting the length of tenure required for CTE teachers to be eligible for retirement benefits; this might require a legislative change.

Task #3: Benchmark state staffing capacity and roles considering regional and center-level support needs.

The Approach

The study team began by reviewing Vermont state regulations, CTE Center staffing requirements, and AOE current staffing and roles via desk research. Conversations were held with AOE CTE staff and reviewed the FY24 state budget and the Vermont Perkins fund grant allocations. The study team then used the CTE Center staff directory and CTE Center budgets to map current Center staffing and roles.

After the study team had assembled an understanding of the landscape, input was gathered from AOE and the Advisory Group on CTE staffing needs and how roles and functions might best be distributed at the state, regional, and Center levels. The study team then reviewed staffing numbers and functions in 11 benchmark states.

Findings Based on the Research and Analysis

Current State CTE Staffing and Roles

CTE is one of six teams in the [Student Pathways division](#) of Vermont's Agency of Education (AOE). The others are Adult Education and Literacy, Personalized Learning, Proficiency Based Learning, Afterschool and Summer Programs, and the Administrative Team that oversees cross-disciplinary work such as Community Schools, Expanded Learning Opportunities, and Literacy efforts. According to the [AOE FY 2024 Budget Book](#), there are 24 FTE positions that support the work of the Student Pathways Division.

The Student Pathways division is responsible for implementing several major programs, including the state Flexible Pathways initiative (Act 77), adult education literacy, and community schools. In addition, the division oversees several federal grants, including Title II of WIOA, GEER grant initiatives, parts of ESSA, and Perkins; federal funds account for roughly half of the division's budget.

Within Student Pathways, the CTE team has two full-time staff members: the State CTE Director and a CTE Program Coordinator. Both positions primarily focus on oversight of the federal Perkins grant which funds CTE in the state, approval of CTE programs, provision of CTE program standards, and CTE director and teacher support. They rely on other staff within the division who have other job responsibilities beyond CTE, including a Career Pathways Coordinator. These shared staff focus on aligning CTE with middle school and postsecondary programming, providing content support in some but not all industry areas, CTE dual enrollment arrangements and monitoring, and financial accounting. Finally, the data specialist sits outside of the Student Pathways Division and dedicates 50 percent of his time to CTE data tracking and analysis.

In previous decades and up until the late 2000s, the Vermont Department of Education had between 8 and 10 staff positions that supported federal Perkins program implementation,

oversight of CTE, and state-led efforts to ensure quality CTE programming.¹³ In the 1990s, the CTE staff numbered 16 or more. Vermont, like many states across the US, has slowly cut back state education agency staff, including CTE personnel.

CTE Center Staffing and Roles

The smallest CTE Center has 12 staff and the largest has 65. The ratios vary, but in general non-teaching staff makes up 30-40% of staff allocations in the Centers, with teachers making up 60-70%.

According to the state's [Career and Technical Education State Board Regulations](#), CTE Centers with more than five CTE programs (which is every Center except Canaan and Missisquoi) are required to hire the following positions:

- Director
- Guidance counselor
- Assistant director for adult education
- WBL coordinator
- Special needs coordinator

The regulations do not distinguish between CTE Centers that offer half-day or full-day programming. Staffing varies based on student enrollment, CTE and Pre-Tech programs offered, and except for the required positions above is at the discretion of the CTE Center director who is responsible for hiring.

The director and other administrators/coordinators are responsible for leading the center, managing their Perkins grant local distribution, securing and maintaining state approval of CTE programming (to receive Perkins funds), maintaining facilities and equipment, hiring and supporting teachers, coordinating with sending high schools, and collaborating with the Regional Advisory Board.

Most Centers have between 10-19 CTE teachers; one Center has only six and one Center has 31. There is no regulation that requires CTE Centers to employ academic teachers, although all but five of them have at least one. Literacy is the most common subject (provided in nine Centers); only one Center has a science teacher. Two Centers have EL Specialists.

The Advisory Group shared that these regulations are out of date. The study team could not determine when these rules were adopted but have been told it has been decades since they were revised. The State Board and the AOE are currently working on regulation updates.

Perkins Funding for Staffing

In 2023, Vermont received approximately \$5,856,000 in Perkins funding from the federal government to support its secondary and postsecondary CTE programs. According to the AOE, this was distributed as follows in Table 3 below.

¹³ Per AOE report CTE Governance in Vermont: Mapping a Direction for the Future – no link available.

Table 3: Perkins Grant Fund Allocations FY24

Line Item		Amount
State Level		\$878,998.65
5% total grant	State Administration of Funds	\$292,999.55
10% total grant	State Leadership Activities	\$585,999.10
Reserve Allocation		\$4,976,992.35
6.8% total grant	Reserve Fund	\$400,000
Allocations to Subrecipients		\$4,976,992.35
22% remaining	Postsecondary CTE (Community College of Vermont)	\$1,007,818.35
78% remaining	Secondary CTE (15 CTE Centers* and an LEA consortium that contracts with two private schools providing state approved CTE programs)	\$3,573,174.00
TOTAL		\$5,855,991.00

*Note: Canaan and Missisquoi do not receive Perkins grants funds because they do not meet program size, scope, and/or quality requirements

The majority of the Perkins funds are required to be distributed to local postsecondary and secondary CTE recipients. Some of the State Leadership Activities allocation is required to be spent on individuals in corrections facilities, special populations, and to prepare students for nontraditional fields.

Vermont has been putting \$400,000 per year in the reserve; next year this will increase this to \$650,000. These funds help pay for dual enrollment courses in CTE programs; statewide CTE Teacher TEC meetings; statewide CTE summer professional development conference for teachers; WorkKeys curriculum and other statewide curriculum access for CTE centers; etc.

Overall, the AOE reports that it has about \$515,680 to cover salaries, benefits, travel, etc. for AOE staff with Perkins/CTE responsibilities, a relatively small amount, even for a small state.

How Other States Staff CTE

By reviewing websites and corresponding with state CTE directors by email, the study team gathered information on CTE staffing and roles in 11 small to medium-sized states. The states chosen were intended to represent variations pertinent to this analysis, they included:

- States with regional systems like Vermont: Maine, New Hampshire
- States with unified statewide systems: Connecticut, Delaware, Rhode Island
- States that organize CTE at the postsecondary level (not the Department of Education) to promote CTE secondary and postsecondary alignment: Colorado, Indiana, and Iowa
- States with innovative staffing roles: Tennessee and Virginia
- The state with the smallest population: Wyoming

In general, it is hard to make assumptions about the proper ratio of state CTE staff to CTE students served without knowing more about how functions are assigned at the state, regional and local levels. Looking at this in terms of the ratio of staff to CTE enrollment, the only comparable states to Vermont are Maine and New Hampshire. Both have more dedicated CTE staff per enrolled student, as seen in Table 4 below. Maine has about one staff for every 1,000 students; New Hampshire has about one staff for every 1,350 students. Vermont has one staff for every 2,000 students.

Table 4: State CTE Staffing Models

State	Total Population	CTE Enrollment as Percentage of High School Population	CTE Student Enrollment	State CTE Dedicated Staffing
CO	5,997,070	31.63%	88,518	29
CT	3,615,499	73.27%	120,837	4
DE	1,017,551	98.40%	44,413	9
IN	6,876,047	24.20%	78,825	9
IA	3,233,572	68.39%	106,928	10
ME	1,372,559	12.99%	7,200	7
NH	1,395,847	17.88%	9,678	7
RI	1,110,822	36.97%	16,463	3
TN	7,080,262	61.24%	184,285	16
VA	8,820,504	61.73%	247,235	25
WY	586,485	64.90%	18,918	4
VT	647,156	24.60%	5,999	3

In addition to the number of state agency CTE staff, the study team also looked at job titles and key roles and responsibilities. Like in Vermont, the benchmark states also have staff dedicated to managing and overseeing Perkins grants, approving CTE programs, developing curriculum, etc. Some innovative job functions were noted that Vermont might want to consider:

- Labor market specialist (Tennessee)
- Work-based learning coordinators (Indiana, Iowa, New Hampshire) and work-based learning regional specialists (Virginia)
- Special populations specialist (Colorado and Indiana)
- Career coaching/navigation (Indiana)
- Middle school specialist (Delaware and Maine)
- Postsecondary and Workforce Transitions (Delaware)
- Industry credential specialists (Virginia)

It seems that many states designate staff to connect and align CTE investments with larger state workforce and economic development goals. These staff have expertise in labor market analysis, postsecondary and workforce transitions, work-based learning, and industry credentials. States also incorporate early career awareness and exploration through career coaching and middle school programming. Finally, two of the benchmark states have personnel with a background in special populations who can bring an equity lens to CTE.

Some states have dedicated CTE technical assistance/resource centers that assist the state department of education in addressing Perkins priorities. In New York, the [CTE technical assistance center](#) is staffed by four people in the center's central office plus a regional team of 6 people who work directly with schools to support CTE pathway and program development. Virginia also has a [state CTE resource center](#).

In correspondence with states, some CTE directors shared their perspectives on state capacity. Almost all suggested that their staffing was not sufficient, with only one director reporting that it was sufficient. The others shared comments:

- *On the whole, I'd say we are understaffed. Most of our full-time positions manage both programs of study and significant operational functions. We realistically need a dedicated policy advisor/Deputy Director; at least 2 more program/operational staff; and an additional secretary. We currently contract out a significant amount of work and are still struggling.*
- *We have three positions and one vacancy which has been hard to fill. People don't want jobs in education and budget issues are a challenge.*
- *Most of us in the division (a total of 26 people), touch on CTE on some level. We are a smaller team now than we were several years ago. We used to have a staff member who directly worked on the Perkins budget, but now that is part of the senior (state) director job. I would love to have that back.*

Proposed Action Steps

The benchmarking did not provide clear guidance on how best to staff CTE at the state level, as states organize staffing very differently. There is no obvious ratio of staff to students served and much depends on how CTE is organized within a state – where authority lies and how roles and functions are distributed. It is clear though that Vermont's CTE staffing capacity is low at the state level, with only two full-time dedicated CTE staff, supplemented by a few other staff who have responsibilities beyond CTE. This means that dedicated state staff are primarily focused on Perkins administration and that it falls to part-time staff to focus on any other CTE priorities. All other states examined invested in staff dedicated to a wider range of CTE priorities, including career exploration, connections to post-secondary and workforce priorities and the provision of professional development for staff.

Vermont's limited state staffing means that most of CTE programming is managed by local centers. This raises issues about capacity and efficiency. First, some centers do not have the capacity to manage their programs and budgets well; this impacts the quality of CTE programming. And second, there are some functions that could be shared across centers, such as curriculum and teacher professional development, which would be more efficient in serving a relatively small CTE student population. State-developed CTE curriculum would provide a more consistent and potentially rigorous learning experience for students and also allow teachers to focus on adapting lessons to best meet their students' needs rather than finding or developing their own materials. This may boost retention and smooth entry for new teachers.

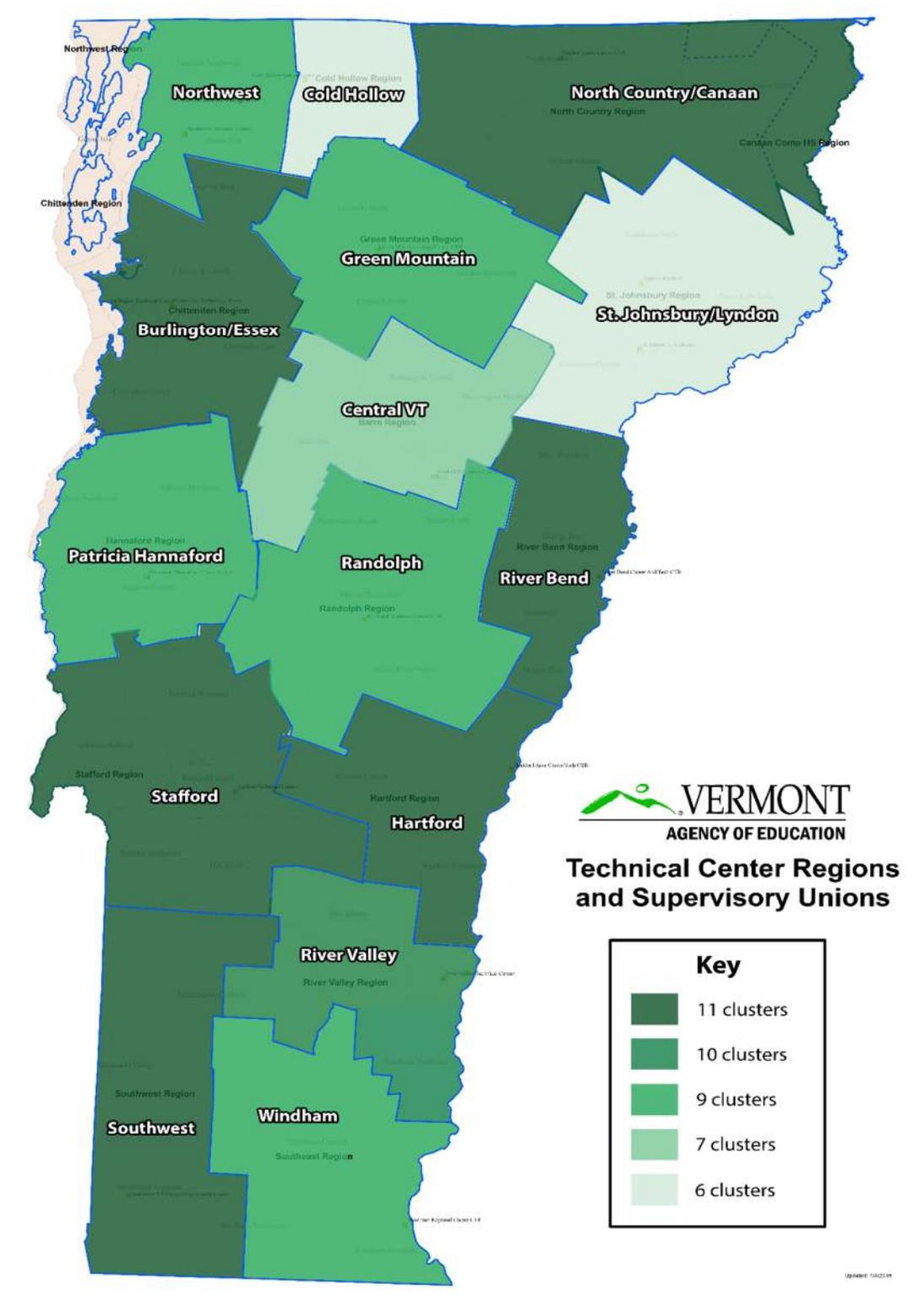
There is also a lack of staff capacity to coordinate CTE investments with the state's workforce and economic development goals. (This is an issue that is noted in Task 1 as well). Several benchmark states have staff with expertise in labor market analysis, postsecondary and workforce transitions, work-based learning, and industry credentials who are focused on these

issues. These states also have more state funding for career coaching and middle school programming.

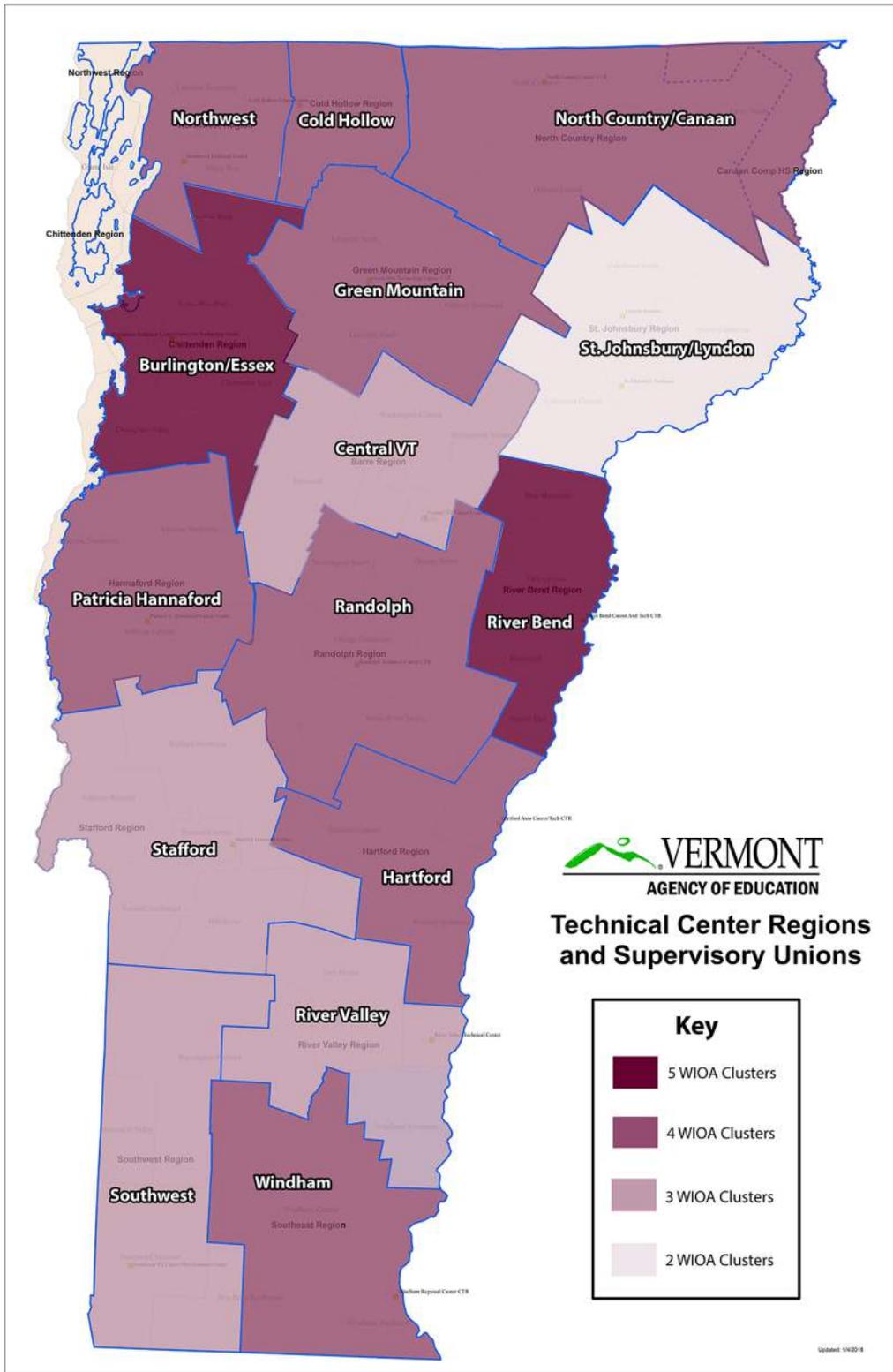
The study team recommends that Vermont invest in additional state level staff so as to provide support for the system in a more efficient and consistent way as well as to better organize and coordinate a CTE to be more equitable and robust. This would include expanding oversight of career education/exploration as well as linkages to post-secondary and workforce development priorities and systems. How this additional staffing would be organized would need to align with any shifts in governance, were Vermont to consider building a regional staffing capacity.

Note: The study team will use these analyses to inform governance recommendations, which is the next phase of the work.

Attachment A: Map of Career Cluster Distribution by CTE Center



Attachment B: Map of Workforce Development Priorities by CTE Center



Appendix C. CTE Finance Analysis Summary Tables

The following tables provide additional detail on the study team’s calculation of median expenditures per FTE. The team utilized data provided by the AOE: expenditure data from FY21, FY22, and FY23, along with semester FTE data for the same years. It filtered on expenditures for program codes 31 and 32 to isolate the costs to implement CTE, then calculated each Center’s expenditures per FTE. One center (Randolph Technical Career Center) was excluded from FY21 calculations due to an error in the expenditure file.

Program Code 31 & 32 Expenditures Per FTE Tables, with and without Federal Funding

All Centers Center Name	FY 2021		FY 2022		FY 2023	
	Total	Without Federal	Total	Without Federal	Total	Without Federal
Patricia Hannaford Career Center	\$30,991	\$28,369	\$26,919	\$25,239	\$31,275	\$29,696
Central Vermont Career Center	\$22,623	\$19,233	\$17,861	\$16,641	\$18,791	\$17,038
Northwest Technical Center	\$19,944	\$17,164	\$13,327	\$11,769	\$14,057	\$12,841
Burlington Technical Center	\$25,418	\$23,369	\$31,919	\$29,048	\$33,773	\$31,144
Cold Hollow Career Center	\$21,984	\$17,962	\$20,499	\$18,116	\$19,299	\$17,687
Center for Technology Essex	\$23,084	\$20,449	\$23,420	\$21,822	\$24,948	\$23,303
Hartford Area Career/Tech Center	\$19,636	\$17,677	\$18,910	\$17,447	\$21,110	\$19,692
Green Mtn Technology/Career Center	\$25,766	\$23,464	\$28,084	\$24,893	\$29,015	\$27,195
Southwest Tech	\$20,422	\$18,871	\$27,073	\$25,326	\$24,731	\$24,561
North Country Career Center	\$18,399	\$15,952	\$19,841	\$19,841	\$25,985	\$24,184
River Bend Career and Tech Center	\$21,380	\$19,634	\$21,215	\$18,577	\$19,681	\$15,706
Randolph Technical Career Center	-	-	\$24,001	\$22,575	\$25,435	\$23,026
Stafford Technical Center	\$23,094	\$20,722	\$23,208	\$21,348	\$25,541	\$22,176
Windham Regional Career Center	\$30,705	\$28,257	\$40,147	\$36,898	\$26,336	\$24,704
River Valley Technical Center	\$47,933	\$40,190	\$25,379	\$23,627	\$25,184	\$23,803
Median Expenditure per FTE	\$22,853	\$20,041	\$23,420	\$21,822	\$25,184	\$23,303

Centers with Academic Support Personnel Center Name	FY 2021		FY 2022		FY 2023	
	Total	Without Federal	Total	Without Federal	Total	Without Federal
Central Vermont Career Center	\$22,623	\$19,233	\$17,861	\$16,641	\$18,791	\$17,038
Center for Technology Essex	\$23,084	\$20,449	\$23,420	\$21,822	\$24,948	\$23,303
Hartford Area Career/Tech Center	\$19,636	\$17,677	\$18,910	\$17,447	\$21,110	\$19,692
Green Mtn Technology/Career Center	\$25,766	\$23,464	\$28,084	\$24,893	\$29,015	\$27,195
Randolph Technical Career Center	-	-	\$24,001	\$22,575	\$25,435	\$23,026
Stafford Technical Center	\$23,094	\$20,722	\$23,208	\$21,348	\$25,541	\$22,176
Windham Regional Career Center	\$30,705	\$28,257	\$40,147	\$36,898	\$26,336	\$24,704
Median Expenditure per FTE	\$23,089	\$20,585	\$23,420	\$21,822	\$25,435	\$23,026

Top 5 Centers: Postsecondary Credentials (SY23)	FY 2021		FY 2022		FY 2023	
Center Name	Total	Without Federal	Total	Without Federal	Total	Without Federal
Central Vermont Career Center	\$22,623	\$19,233	\$17,861	\$16,641	\$18,791	\$17,038
Northwest Technical Center	\$19,944	\$17,164	\$13,327	\$11,769	\$14,057	\$12,841
Center for Technology Essex	\$23,084	\$20,449	\$23,420	\$21,822	\$24,948	\$23,303
Randolph Technical Career Center	-	-	\$24,001	\$22,575	\$25,435	\$23,026
River Valley Technical Center	\$47,933	\$40,190	\$25,379	\$23,627	\$25,184	\$23,803
Median Expenditure per FTE	\$22,853	\$19,841	\$23,420	\$21,822	\$24,948	\$23,026

Top 5 Centers: Postsecondary Credits (SY23)	FY 2021		FY 2022		FY 2023	
Center Name	Total	Without Federal	Total	Without Federal	Total	Without Federal
Central Vermont Career Center	\$22,623	\$19,233	\$17,861	\$16,641	\$18,791	\$17,038
Burlington Technical Center	\$25,418	\$23,369	\$31,919	\$29,048	\$33,773	\$31,144
Green Mtn Technology/Career Center	\$25,766	\$23,464	\$28,084	\$24,893	\$29,015	\$27,195
River Bend Career and Tech Center	\$21,380	\$19,634	\$21,215	\$18,577	\$19,681	\$15,706
Windham Regional Career Center	\$30,705	\$28,257	\$40,147	\$36,898	\$26,336	\$24,704
Median Expenditure Per FTE	\$25,418	\$23,369	\$28,084	\$24,893	\$26,336	\$24,704

Top 5 Centers: Work-Based Learning (SY23)	FY 2021		FY 2022		FY 2023	
Center Name	Total	Without Federal	Total	Without Federal	Total	Without Federal
Burlington Technical Center	\$25,418	\$23,369	\$31,919	\$29,048	\$33,773	\$31,144
Cold Hollow Career Center	\$21,984	\$17,962	\$20,499	\$18,116	\$19,299	\$17,687
Center for Technology Essex	\$23,084	\$20,449	\$23,420	\$21,822	\$24,948	\$23,303
North Country Career Center	\$18,399	\$15,952	\$19,841	\$19,841	\$25,985	\$24,184
Stafford Technical Center	\$23,094	\$20,722	\$23,208	\$21,348	\$25,541	\$22,176
Median Expenditure per FTE	\$23,084	\$20,449	\$23,208	\$21,348	\$25,541	\$23,303

Top 5 Centers: Post Program Placement (SY23)	FY 2021		FY 2022		FY 2023	
	Total	Without Federal	Total	Without Federal	Total	Without Federal
Central Vermont Career Center	\$22,623	\$19,233	\$17,861	\$16,641	\$18,791	\$17,038
Burlington Technical Center	\$25,418	\$23,369	\$31,919	\$29,048	\$33,773	\$31,144
North Country Career Center	\$18,399	\$15,952	\$19,841	\$19,841	\$25,985	\$24,184
River Bend Career and Tech Center	\$21,380	\$19,634	\$21,215	\$18,577	\$19,681	\$15,706
Windham Regional Career Center	\$30,705	\$28,257	\$40,147	\$36,898	\$26,336	\$24,704
Median Expenditure per FTE	\$22,623	\$19,634	\$21,215	\$19,841	\$25,985	\$24,184

Full Time Programs	FY 2021		FY 2022		FY 2023	
	Total	Without Federal	Total	Without Federal	Total	Without Federal
Central Vermont Career Center	\$22,623	\$19,233	\$17,861	\$16,641	\$18,791	\$17,038
Center for Technology Essex	\$23,084	\$20,449	\$23,420	\$21,822	\$24,948	\$23,303
Green Mtn Technology/Career Center	\$25,766	\$23,464	\$28,084	\$24,893	\$29,015	\$27,195
Randolph Technical Career Center	-	-	\$24,001	\$22,575	\$25,435	\$23,026
Stafford Technical Center	\$23,094	\$20,722	\$23,208	\$21,348	\$25,541	\$22,176
Median Expenditure per FTE	\$23,089	\$20,585	\$23,420	\$21,822	\$25,435	\$23,026

Part Time Programs	FY 2021		FY 2022		FY 2023	
	Total	Without Federal	Total	Without Federal	Total	Without Federal
Patricia Hannaford Career Center	\$30,991	\$28,369	\$26,919	\$25,239	\$31,275	\$29,696
Northwest Technical Center	\$19,944	\$17,164	\$13,327	\$11,769	\$14,057	\$12,841
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