

Career Technical Education Funding Pilot Projects and Middle School Collaboration

REPORT

June 14, 2021

**Report to the House and Senate
Committees on Education, the House
Committee on Commerce and Economic
Development, and the Senate Committee
on Economic Development, Housing and
General Affairs**

Submitted by

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During the 2018-2019 school year, the Agency of Education worked with many stakeholders to develop this strategic vision and goals for the Career Technical Education (CTE) system in Vermont. Over 1,700 Vermonters contributed their opinions and ideas to its development. All areas of the state were given an opportunity to participate in the process. Participants included students, parents, employers, and there was representation from general education, career technical education, post-secondary education, workforce development and state agencies and departments.

Vermont's vision for career technical education is that all Vermont learners attain their postsecondary goals by having access to career and technical education systems that are equitable, efficient, integrated and collaborative.

We will achieve this by:

- Supporting only high-quality, rigorous, aligned CTE career pathway programs that are informed by available state, New England regional, and national labor market data.
- Engaging industry as a full partner in the creation, validation, and maintenance of CTE programs. A partner as defined here refers to business/industry as an owner of the success or failure of the system to produce individuals with highly valued skill sets.
- Developing and implementing career advisement systems that support career exploration and that allow all learners to be successful in pathways of interest.
- Supporting collaboration among systems and promoting coordination between systems as a means of ensuring equity and of providing students with a high-quality experience.
- Improving the public perception of CTE.

Endorsed by the Vermont State Board of Education

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Policy positions expressed in this report were developed through the lens of this vision and goals.



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Executive Summary

Pursuant to [Act 189 of 2018](#), Sec. 6, this report to the House and Senate Committees on Education, the House Committee on Commerce and Economic Development, and the Senate Committee on Economic Development, Housing and General Affairs addresses two areas: the outcomes of CTE funding and governance pilot projects authorized in Section 6(b), and recommendations on CTE pre-tech programs and collaboration between middle schools and CTE centers addressed in Section 6(c).

Since the passage of Act 189 of 2018 the General Assembly has passed other laws that relate to the content of this report. This preface is intended to recognize that additional work studying and recommending changes related to career technical education (CTE) and the work of the state's regional CTE centers was undertaken during the 2019-2020 biennium. Notably:

- Act 80 of 2019 included a provision aimed at studying how Vermont Technical College could offer degree programs at regional CTE centers. This led to the creation of a [report, outlining how that would be possible](#).
- Act 120 of 2020 created the Select Committee on the Future of Public Higher Education in Vermont. The committee complete its work in April 2021 and released [its final report](#).

This report does not contemplate how change at the post-secondary level would inform changes in CTE at the high school level, though any systems level change at the post-secondary level could and should incorporate curricular and opportunity alignment with the secondary workforce preparation – both CTE and adult education and literacy (AEL) -- and general education systems.

Background

In May 2018, the General Assembly passed, and Governor Scott signed Act 189 into law. Its overall intent was to “commit to a redesign of Vermont’s workforce development and training system” which would enhance creation of the skilled and productive workforce that is critical for the state’s economic vitality.” The law includes several components related to career technical education (CTE), including: authorizing the Agency of Education (henceforth the “AOE” or “Agency”) to approve up to four pilot sites/projects that would develop and study proposals to change the CTE funding and/or governance model; introducing students to CTE through introductory (pre-technical) programs and activities focused on engagement of middle school students by regional CTE centers; further defining and operationalizing career pathways and adult technical education; and assigning oversight of a robust credentialing system to the State Workforce Development Board (SWDB).

Since the late 1980s, legislators and stakeholders in Vermont have discussed the challenges of both the current CTE funding system and the diverse CTE governance structures across the state. In one of many efforts to respond to these concerns, the General Assembly enacted Act 69 of 2017 which resulted in a series of recommendations from various working groups led by the SWDB. The resulting recommendations were incorporated into Act 189 (the “Act”). In the Act, the General Assembly authorized up to four pilot projects, to be selected and approved by the

AOE. The purpose of this provision of the law was to allow Local Education Agencies (LEAs) and their partner CTE centers to propose mini-studies to explore the issues and propose solutions related to funding, or governance, or both, with the aim that these high-leverage policy proposals/changes would be scalable for the entire state. These proposals are discussed in this report.

The second requirement of the law, addressed in the latter part of this report, was to have the Agency study existing practices and to recommend policy changes that would result in increased collaboration and coordination with middle schools to provide intentional curricular connections to CTE, for CTE centers to take additional steps to connect middle school students to introductory courses, and to expand offerings across each region -- all with the purpose of “expanding” access to CTE in support of students graduating high school career and college ready. While increased middle school engagement was the explicit target, to achieve this purpose required examination through a systems-level lens across the PK-16 continuum.

Legislative Recommendations

1. Provide additional time for the consultants to further explore the areas they identified as necessary to better understand the impacts of the proposed changes. An example would be to include the need for re-assignment of towns and schools to a different technical center region to better align with new district boundaries created because of Act 46 mergers.
2. Provide funding to the Agency of Education for contracted consultants to finish the work necessary to address unresolved issues and areas for further examination.
3. Provide grant funding for CTE centers to off-set local costs of working with consultants as determined by areas for further examination.
4. Review and update statutory language for the regional advisory boards to include membership that is reflective of modern concerns of the CTE system, and update and expand the responsibilities of the regional advisory board (RAB) and as specified in the body of the report.
5. Require supervisory unions/districts and CTE centers to share information about CTE, in a variety of ways, with students in 7th through 10th grade, and including completion of Flexible Pathways Profile Tool for CTE (and as specified in the body of the report).
6. Consider simplification of the current CTE structure into a smaller number of regional centers OR one statewide CTE district with regional hubs.

Agency of Education Actions

- The AOE included language about career counseling in the Perkins V state plan and encourages regional CTE centers to use Perkins funds on these activities when indicated in their 2-Year Comprehensive Local Needs Assessments.
- The AOE has established a dedicated workflow to develop a statewide approach to career and college advising.
 - The AOE has established a more formal relationship with the Vermont School Counselor Association.
 - The AOE deployed the first ever state-wide School Counseling Survey in February 2021 and will release the findings Summer 2021.

- The AOE will use the findings of the survey to inform policy priorities related to school counselors and career and college counseling for the next 5 years.
- The AOE will adopt and revise standards for introductory CTE programs.
- The AOE will update CTE program content standards, including standards for pre-tech/introductory programs.
- The AOE will begin the work of revising the State Board of Education (SBE) rules, including the rules pertaining to pre-technical programs.
- The AOE is working to identify critical proficiencies/student learning for each CTE program of study, aligned to proficiency-based graduation requirements (PBGRs), to ensure high quality, rigorous program curricula.

Act 189, Section 6(b): Funding and Governance Pilot Outcomes

Pilot projects. The Agency of Education shall approve up to four pilot projects in a variety of CTE settings. These pilot projects shall propose novel ways of integrating funding for CTE and general education and new governance structures for regional CTE centers, including unified governance structures between regional CTE centers and high schools, or both. Pilot projects shall require both high school and regional CTE center involvement, and shall be designed to enhance the delivery of educational experiences to both high school students and CTE students while addressing the current competitive nature of funding CTE programs.

(1) A pilot project shall extend not longer than two years.

(2) The Agency shall establish guidelines, proposal submission requirements, and a review process to approve pilot projects.

(3) On or before January 15, 2020, the Agency shall report on the outcomes of the pilot projects...

Selection Process

The AOE anticipated releasing the pilot application criteria and process during the summer of 2018. However, due to several changes at the state and federal level, the requests for proposals were delayed for several months. In June 2018, Congress passed a reauthorized version of the Carl D. Perkins Career and Technical Education Improvement Act, now called Perkins V. This required the Agency to reallocate CTE staff time and attention within a compressed timeline to determine a course of action and both develop and submit a one-year transition plan, and begin planning for development of a four year plan, further delaying the roll out process for the state pilot application.

On December 3, 2018, the AOE released a request for pilot site proposals, with an application deadline of February 15, 2019. As part of the process, the Agency solicited written questions from potential applicants and partners. The answers were reviewed on a recorded Q&A conference call on January 11, 2019, a month before the application deadline. The AOE expected that the projects would be announced on March 1 with a start date of April 1, 2019.

Based on participation in the grant application information session, the Agency was expecting at least five proposals, but instead received one. Because of this, the AOE decided to extend the application deadline to May 1, 2019. As a result, two additional proposals were received, one of which was rejected as it was determined to be out of scope for the pilot project as described both in the law and in the request for proposals.

Pilot Sites

The approved proposals were received from River Valley Technical Center School District (RVTC) in Springfield, and from Southwest Vermont Regional Technical School District (CDC), in Bennington. Both proposals had similar approaches to changing the funding model, and neither attempted to address governance issues. Both proposals were selected on the merits of the ideas presented and the feasibility of the proposals, which are closely linked to the existing independent technical center school district governance model already in place for both centers.

As AOE staff moved forward with internal legal reviews of the proposals, and of the authority granted the Agency by Act 189, AOE's General Counsel determined that the existing language in the Act did not give the Secretary of Education sufficient authority to waive existing statutes related to CTE funding, tuition, and governance.

The Agency's General Counsel, Emily Simmons, the Division Director for the Student Pathways division, Jess DeCarolis, and the State CTE Director, Jay Ramsey, met with Scott Farr, the Superintendent/Director of RVTC, and Mike Lawler, the Superintendent/Director of CDC on July 2, 2019 to discuss how to proceed. It was determined in this meeting that the projects should proceed in study mode, meaning that the proposals should be merged due to their similarity, and the impacts on the property tax rate should be well understood before any further policy action could be taken. It was determined that the study mode would be extended into early winter 2019 and should include the third independent technical center school district in the state that operates the Patricia A. Hannaford Career Center (PAHCC) in Middlebury. Dana Peterson, the Superintendent/Director of PAHCC agreed to participate in the study.

The AOE granted \$80,000 over two years to the RVTC and CDC, the CTE center grant recipients. These funds were used to implement introductory coursework (pre-technical foundations) as a furtherance of the policies in the Act, and to pay for consultants with expertise in school finance and Vermont's tax system to study the impacts on the tax rate, identify and plan for any exceptions to the proposed model, and propose any new or unconsidered models.

The technical centers contracted with consultants Bill Talbott, former CFO at AOE, and Deb Brighton, an expert on Vermont's tax system, for the funding model project. The consultants examined the impacts on the property tax rate of two different approaches that draw funds directly from the Education Fund, rather than relying on student participation in CTE, a pass-through payment from the Agency of Education, and an invoice from CTE centers to the high schools to pay the balance. The technical centers, with technical assistance from the AOE, met several times during fall 2019 and into winter 2020.

Funding Approach

Summary of the Current State of CTE Funding

Per 16 V. S. A. §1541(c)(1) the school board of the district that operates a CTE center, working with its regional advisory board (RAB), annually sets the budget for the center. 16 V. S. A. §428 sets the process of approving a school district's budget. Only the electorate of the host school district must vote on the budget; some CTE centers have voluntarily expanded this to include the electorate of the service region.

Independent technical center school districts (ITCSD) such as RVTC and CDC and their school boards must hold annual meetings, and the electorate from throughout the service region are given the opportunity to vote on the annual budget on Town Meeting Day (16 V. S. A. §1578a) or whenever the annual meeting date is set. In this structure, the ITCSD school board also functions as the RAB. This model provides transparency to voters on the cost of technical education in the service region as the school board for the center develops the budget and voters from throughout the service region vote on the technical center budgets.

Budgets are based on several factors but are driven by a rolling full-time equivalent (FTE) average over three years which is derived from the amount of time that students spend in CTE center programs. Each high school in a region uses their specific FTE count to inform their budget. The “tuition” that CTE centers charge is better understood as a “per-FTE cost.” CTE centers calculate their tuition based on their budget and the FTE numbers; high schools’ tuition costs for technical education are based on the rolling three-year average FTE and the CTE center’s “in-state” announced tuition. This process is outlined in 16 V. S. A. §§ 1552 and 1561.

As an example: In a given year, one high school in a CTE center’s service region may have a rolling six-semester/three-year average of 65.2 FTE. The regional CTE center may have calculated their “in-state” tuition to be \$10,000. Each high school in the CTE service region computes the amount to budget for CTE each year by multiplying their current six-semester average by the CTE center’s “in-state” tuition amount. In this example, the high school with 62.5 FTEs will pay \$652,000 to the regional CTE center in the coming school year. If in the next year, that high school sends more or fewer students than it did in the previous school year, the amount to be paid from tuition will slightly decrease or increase. A significant change in the high school’s CTE enrollment from one year to the next will not dramatically affect the amount to be paid, nor will it cause an immediate impact on the technical center’s budget.

Once a school year is under way, the Agency makes partial tuition payments to each CTE center on behalf of each high school (pass through or “on behalf” payment) (16 V. S. A. §1561(b)). Once those funds are received, the CTE centers invoice the high schools in their region for the balance of funds.

Overview of the Pilot Proposal

The pilot sites proposed redefining the CTE budgeting and funding systems and offered two possible implementation models. Each of the implementation models is based on a revised process where each CTE center would develop its own budget with assistance from the RAB. CTE center budgets would go before all voters in the service region. Once approved, the technical center funding would be taken directly from the Education Fund. The high schools in these regions would no longer need to budget for technical center tuition, therefore decreasing their budgets. Towns would add a regional technical education line to their property tax bills, and property taxpayers would see a new line on their bill, but it would not represent a new tax.

In the current funding system, the specific tuition amount for CTE is already factored into the school tax rate as the CTE tuition cost is already included in each high school’s budget. In the new approach, high schools would no longer need to budget for the cost of CTE tuition, and “on behalf” payments from the AOE to each technical center would no longer be necessary.

Implementation models:

Starting from the premise above, two possible implementation models were identified.

Implementation Model One is dependent on the independent technical center school district governance model briefly described above. High schools would remove CTE tuition from their budgets; and there would be a corresponding reduction in property tax of about \$0.06 which would then show up in a different way by adding a new line for regional technical education on

the property tax bill but only in those regions with an independent technical center school district. Again, this does not represent a new tax. On average, tax bills would be the same, although there would likely be increases and decreases for different towns. If adopted, this model would only apply to the three technical center school districts, as the model is dependent on that governance model. The remaining twelve public technical centers, and two centers hosted by private schools would not have a change in funding system unless they first underwent a change in governance structure.

Implementation Model Two, which would be more of a state-wide model and not specific to the independent regional technical school district governance model, is a block grant model. It would apply to all the public CTE centers, and not to the two centers hosted by private schools. The model would have the same shift in budgeting as the first model, and would have a similar tax rate, but would repurpose existing state supports for technical education (salary assistance, tuition reduction¹) to help reduce the cost of operating the center and spread the burden for that assistance across all homestead taxpayers and reduce the amount to be raised locally. Repurposing of salary assistance and tuition reduction funds would not mean lost revenue for technical centers, it would present an opportunity to revisit the purpose of these long-standing supports to realign them with the current and future needs of the CTE system.

In the second model, there would still be a regional tax rate, that would likely be lower in this model than the first, and the tax would cover the remaining CTE costs not covered by the block grant. The net result would be that the average homestead (and non-homestead) tax bills would be the same, although there would be increases and decreases in different towns.

The primary difference between the first and second models is that in the second model, more CTE funding is borne by all property taxpayers uniformly because of the block grant. This creates greater equity across the state and means that fewer funds may need to be raised by local taxpayers.

If we were to move to a statewide implementation of any of these models, changes would need to be made to existing statutes, including those governing host high schools and tuition (Title 16, Chapter 21 and 37), and budgeting processes (Title 16, Chapter 11), as well as any language pertaining to Education Fund payments to CTE centers (Title 16, Chapter 133). This implementation would need to take place over a period of at least two years and any statutory authority should provide a clearly identified date by which the new system would need to be in place. One recommendation for consideration would be to freeze the existing FTEs for CTE centers to allow consistent funding while any transition is made. This approach would also help to resolve COVID-19 related concerns raised by CTE administrators.

Complete results from the funding pilots cannot be reported because the process is still underway. The pandemic caused school administrators to quickly shift gears to supporting teachers and students remotely, and it caused the AOE's staff to shift quickly to working from home and to be repurposed to supporting emergency closure and remote learning under the

¹ In the 2018-2019 school year the state provided \$2,177,000 in salary assistance, and \$8,644,620 in tuition reduction/supplemental assistance grants to regional technical centers and their host school districts.

Governor’s Executive Orders. Additionally, there are a number of exceptional circumstances, as noted in the introduction, with which we need to contend. These issues include addressing Act 46 mergers that enjoined town school districts across two technical center regions, addressing areas of the state that are served by non-public technical centers, and addressing areas of the state that, per 16 V. S. A. §1531(c) or by policy of the school board, tuition students to schools and technical schools outside the state.

Recommendations to Date

***A note:** In addition to any recommendations related to the specific models outlined above, it is important to note that due to the considerable nuance and complexity of any proposed changes to CTE funding and governance structures, the consultants working on these pilots have a list of areas for further exploration that are necessary to better understand the impacts of the proposed changes.*

The two models that have been outlined should not automatically be contemplated as mutually exclusive. The proposed models could be viewed as complementary to the governance structures that currently exist – one suited for independent technical center school districts, and one suited for the remaining public technical centers. They could also be viewed in stages or as an evolutionary approach – one model naturally leading to the next over time to reduce risk.

In order to take either, or both, models to the next stage of implementation once the studies are complete (6 – 12 months), the General Assembly will need to create language specific to the most desirable model or models. The language would need to address the entities and funds involved – either the three independent technical center school districts, or all public technical centers, or all technical centers, the school districts in their related regions, and the Education Fund.

The evolutionary approach would focus policy on the three independent technical center school districts and have the law create a limited duration “innovation zone²” to allow the centers to operate under the new funding model for up to four years. This would then inform broader changes to the rest of the system. We know from experiences of innovation zones in other states that there is often a lack of closure, follow-up, and broader implementation planning for the period after the innovation zones are authorized. Vermont will need to be cautious in how it frames the innovation zones, and how it defines, going forward, expectations of practice statewide after the limited duration period ends.

² The International Association for K-12 Online Learning (iNACOL) defines it in this way: innovation zones or districts of innovation help state policy leaders identify outdated policies and regulations that may get in the way of educators designing innovative learning models. They create space for districts and schools to innovate, identify policy barriers and remove them through waivers.

Act 189, Section 6(c): Policy Recommendations for Career Readiness Programming

Collaboration. The Agency of Education, in collaboration with the State Workforce Development Board, shall promote collaboration among middle schools and regional career technical education (CTE) centers to engage in activities including: (1) developing and delivering introductory CTE courses or lessons to middle school students that are part of broader career education, exploration, and development programs and that are connected to Career Pathways and CTE programs, as appropriate; (2) increasing student exposure to local career opportunities through activities such as business tours, guest lectures, career fairs, and career awareness days; and (3) increasing student exposure to CTE programs through activities such as tours of regional CTE centers, virtual field trips, and CTE guest visits.

This section of the report addresses introductory (pre-technical) CTE programming in the broader context of career counseling, advising, and exposure; will examine that context along with related programmatic and policy considerations at the local and state levels including the existing practices of CTE centers; and review grant-funded activities from the last two fiscal years that have focused on the implementation of introductory CTE programs. The section ends with a series of policy recommendations.

Broader Context

In education (and across the workforce development system), career readiness is everyone's responsibility. It is important to note that when we use the term "career advising" it is inclusive of "college advising." Whereas our regional CTE centers can be a primary partner in ensuring every student in the state has access to high quality career development experiences, all aspects of the education system should include some element of career awareness, exploration, and development as part of the curriculum. Career advising -- whether it is stand-alone programming or part of a coordinated school counseling system or an interdisciplinary and embedded expectation of instruction or all of the above -- helps ensure students take the right sequence of courses to achieve their goals. Students will need to know that their experiences will be counted as more than an elective; schools will need standards and resources; teachers will need tools, training, and support; and parents will need reliable, easily understood career and labor market information.

Communities around the state regularly make choices about the investments in their schools and in how they will implement Vermont's education laws. It should be noted that some larger schools employ personalized learning plan (PLP) coordinators, flexible pathways coordinators and work-based learning (WBL) coordinators as part of their career counseling and advising programs. The activities of these positions fit under the umbrella of the state's [Career Development Progression](#) and help to inform a student's path to graduation and ultimately to readiness for careers and college. Smaller schools can struggle with budgeting and staffing of similar positions. Other schools, whatever their size, may have built PLP development and flexible pathway exploration into their advisory systems that involve the full faculty.

The variability in investments and approaches across the state can result in perceived or real inequities in terms of the type of access students have to career-related educational

programming. More importantly, because of this variability there is also a lack of coordinated approach within CTE regions that effects continuity of learning and experience, can create unintended barriers and inequities, and has effects beyond the PK-12 education system. One such effect has been that Vermont’s employers end up fielding requests for work-based learning, internships, etc. from multiple educational entities, including high schools, CTE centers, colleges, and others, duplicating requests or exhausting employers – all with the laudable goal of helping students, program participants, and the employers.

Greater coordination within and across regions and education stakeholders, implementation of best practice approaches, and establishing minimum standards/expectations would better serve the needs of students. Below we outline strategies that would support greater coordination and realization of Vermont’s strategic vision for CTE.

Role of Regional Advisory Boards (RABs)

CTE centers are, and have always been, positioned to serve their partner sending high schools, and help ensure every student in Vermont has consistent access to high quality, rigorous technical programs connected to Vermont’s employers and labor market, and taught by professionals who specialize in their technical field. Our regional CTE centers were developed in the 1960s to serve all high schools, whatever their size, and solve issues related to equity of access and economies of scale. Vermont’s CTE system was designed to ensure all students in any given region have access to high quality, rigorous programs of study aligned to labor market needs and aligned with state and federal education and workforce development priorities.

Since the inception of our regional CTE centers, high schools have had some say and ownership over the operation of CTE centers. In order to ensure the centers were meeting the needs of all the partner high schools, and that those high schools were coordinating schedules and calendars and other functions within each region, the General Assembly requires host high school boards to form a regional advisory board (RAB) (16 V. S. A. §1541(b)).

The RAB membership consists of representation from school boards, high schools, superintendents, and businesses from throughout the service region. They are charged with advising the school board that operates the regional CTE center (please note exceptions for technical center school districts whose school board also functions as the RAB³). The RAB has a responsibility to assess the overall success of the CTE center in serving students from throughout the region, which includes meeting overall career and college readiness indicators, and determining whether employers’ needs are met.

RABs can play an important role in helping technical centers and their partner middle and high schools navigate issues affecting education (e.g. career counseling, career exploration, and work-based learning) that frequently cause frustration on the part of partner high schools and CTE centers alike. Issues like scheduling, calendars, and graduation requirements are common points of frustration. Coordination of other programs and services (e.g. career counseling, career

³ Refer to page 6 & 7 of this report for context about independent technical center school district board role.

exploration, and work-based learning) aimed at improving student aspirations and career and college readiness across a region do not have to be frustrating topics for administrators when addressed by a high functioning RAB.

RABs could, with some other modifications to statute, be given additional authority for coordination of workforce preparation and workforce development activities within each region of the state. Their role could be elevated from an advisory capacity to a level of coordination and oversight of workforce education and training opportunities within the region by adding the coordination of regional school calendars, schedules, and the oversight of regional CTE programs. A highly functioning RAB could be used to ensure that all districts in a CTE service region provide career counseling, career exploration, and work-based learning in ways that are consistent and coordinated, all in the interest of ensuring all students are making informed choices about flexible pathways in general, available CTE programs of study, and career and college opportunities.

The existing statute is silent on required membership from adult CTE, adult education and AEL providers, workforce development entities, and even the state colleges. High functioning RABs do include members representing these spaces, however, without additional authority and changes to the required membership, we will not be able to make progress as the state attempts to find the strong coordination and efficiency signaled by recent legislation and study committees (e.g., Select Committee on the Future of Public Post-Secondary Education in Vermont).

The existing statutes that relate to the RAB can be found in multiple sections of Title 16, Chapter 37, and the State Board of Education (SBE) rules. There is no section outside of Chapter 37 that speaks to participation requirements in a RAB. Here are some examples of RAB responsibilities, taken from the SBE rules:

1. Determine, annually, which facilities may not be needed for technical education [and that could therefore be used for general education purposes] (Rule 2375(2)(N))
 - a. Provide written recommendation to accompany requests for use of space (Rule 2397(3)(B))
 - b. Notify the commissioner and the school board using the space before the end of the school year preceding the school year in which it is recommended for reuse for technical education (Rule 2397(3)(4)).
2. Meet at least four times during the school year.
 - a. Review technical education programs and services
 - b. Make written recommendations to the boards operating technical education programs (Rule 2375(4))
 - c. Recommendations concern:
 - i. the quality of services and programs for secondary and adult students,
 - ii. the alignment of programs and services to available jobs,
 - iii. the reasonableness of fees set for rental of facilities and equipment,
 - iv. the appropriateness of the budget for operating the programs,
 - v. the success of the programs in serving all parts of the region, and

- vi. the adequacy of the provision to each student, beginning in grade nine, of appropriate career counseling and technical education information.
3. Consults with/to the school board operating the technical center on the employment and dismissal of the director and of the adult services coordinator (Rule 2379(7)).
4. Approve the development of new programs and determine that the proposed program does not duplicate existing programs in the region (Rule 2380(3)(C))
5. Approve student apprenticeship programs (Rule 2385(3)(A)(1))

The required membership of the RAB and issues to be addressed by the RAB, need to be examined and updated.

Some additional areas that could be coordinated and improved upon through RABs, in partnership with CTE centers and middle and high schools, are addressed in this section. Neither statute nor SBE rules address middle grades. RABs do not have stated authority to address issues on coordinated career advising programs. Since this is not an explicit area of responsibility, many RABs do not discuss it.

Middle Grades

Career and college counseling are part of a more comprehensive solution to career readiness. National research suggests career and college counseling starting in the middle grades is critically important and foundational to post-secondary planning and achievement. At this developmental stage, students are beginning to make decisions about themselves and their abilities that will affect the rest of their lives. Students begin to develop a perception of what they can and can't do at this time and can form inaccurate impressions of their abilities and choices based on social and cultural pressures, and perceived and real cultural limitations and biases. This also means there is an increased risk of disengagement. Historically marginalized groups like girls and young women, BIPOC (Black, Indigenous, People of Color) populations, and economically disadvantaged students are particularly at risk of disengagement and in some cases of dropping out of school⁴ entirely, despite the state's many programs aimed at ensuring this does not happen.

During the middle grades is the best time to ensure that young women understand and have the support to develop aspirations for opportunities in Vermont and beyond in science, technology, engineering, and math (STEM) fields and other fields that pay a livable wage. This means that adults in formal and informal advising and counseling capacities need to be able to recognize and overcome their own biases, understand the opportunities in the labor market and post-secondary education, AND be able to meaningfully connect all the pieces, including to CTE, for students and their families. Career technical education, connected learning, and flexible pathways have been and are increasingly important levers for social and racial justice,

⁴ Association for Career and Technical Education. "Career Exploration in Middle School: Setting Students on the Path to Success." Retrieved December 2, 2019 from: https://www.acteonline.org/wp-content/uploads/2018/02/ACTE_CC_Paper_FINAL.pdf

and all are dependent on the quality, frequency and developmental appropriateness of high-quality career and college advising.

The Council of Chief State School Officers (CCSSO) in partnership with the American School Counselor Association, et. al (2018) released a document entitled [The State of Career Technical Education: Career Advising and Development](#). The national report suggests that middle school counselors who connect students to CTE coursework or career pathways see it as an effective approach for students, but less than a third of counselors do this. In Vermont, this approach may hold true, but as a state we have not prioritized comprehensive supports for school counselors, and, as stated earlier, local school districts have made differing levels of commitment and investments in overarching school counseling programs, including career counseling and career development.

In 2020, the Agency established a partnership with the Regional Educational Laboratory - Northeast and Islands⁵ to develop and deploy a career and college advising survey to school counselors (deployed in February 2021) and publish a report based on those results (projected for June 2021) that would inform a set of recommendations to establish a statewide approach to career and college advising in the state. Any recommendations or statutory adjustments to RAB responsibilities and career and college advising should be informed by this report.

Shop Class

In the early 2000s, to make room for more math and English instruction in response to Federal policies (No Child Left Behind Act), courses such as industrial arts (aka “shop class”), business, and family and consumer sciences^{6,7} were removed from the curriculum of many schools across the nation, including some schools in Vermont. Additionally, in some cases high schools may have discontinued these types of programs as they were seen as competing with CTE programs, which speaks to a missed opportunity to provide better curricular coordination between schools, and a failure to fully develop pathways for students.

These courses served an important role in the vocational and avocational aspirations of students, especially for those that like to work with machines to build and fix things. The professional educator endorsement for industrial arts was repurposed in the mid-2000s as “design and technology education.” Teachers with this endorsement provide students with opportunities to actively explore the full scope of career choices in technology, among other activities as listed in the [endorsement standards](#) (5440-10).

⁵ There are ten federally funded Regional Educational Laboratories that work in partnership with educators and policy makers to develop and use research that improves academic outcomes for students. <https://ies.ed.gov/ncee/edlabs/>

⁶ Office of Career, Technical and Adult Education (USED). Workforce Connections Issue Brief: Family and Consumer Sciences Education. <https://sites.ed.gov/octae/files/2015/05/Issue-Brief-FCS-and-Workforce-Connections.pdf>

⁷ Agency of Education. Family and Consumer Sciences grade Expectations. <https://education.vermont.gov/sites/aoe/files/documents/edu-content-areas-family-and-consumer-sciences.pdf>

Family and consumer sciences (FCS) is another area that has changed significantly in the last 20 years. In the 2018-2019 school year there were only 15 active family and consumer science programs across the state. FCS started in the mid-nineteenth century as a program for girls, aimed at helping them be better wives and mothers, then it transformed in the early 20th century as “home economics” to prepare young women for a path in liberal studies or homemakers. A 21st century FCS program ⁸offers opportunities to introduce students to career fields like culinary arts, hospitality, and tourism, education, human/child development, financial literacy, and can serve those students who are interested in working with people rather than machines.

In the 21st century, there is great potential for schools to rethink the role that industrial arts and family consumer sciences can play in career and college readiness, and to offer modernized versions of these programs. Some schools and community libraries have invested in “makerspaces⁹,” a modern equivalent to “shop” class, or integrated into digital learning and visual and performing arts curricula, as well as flexible pathways options such as work-based learning and Early College.

An area where STEM, industrial arts and family consumer science programming thrives is in afterschool and summer school programs such as the State’s 21st Century Community Learning Centers network of 100 after-school sites. Because these programs serve a large population of elementary and middle school students, this is a valuable space for coordinating programming and engaging in formal and informal advising of youth.

We have an opportunity now to rethink how these offerings fit within a flexible pathway, how they fit in the context of career counseling and exploration, and how they fit as an entry point for a career pathway as a pre-technical type program at the middle and high school level. As mentioned throughout this report, one of our goals is to support career exploration that allows all learners to be successful in pathways of interest. We envision offerings in industrial arts, family and consumer sciences, and business as part of the State’s comprehensive approach to helping students and their families make more informed choices about pathways to their future careers.

Career Technical Student Organizations

Career technical student organizations (CTSOs)¹⁰ like Skills USA, Health Occupations Students of America (HOSA), Future Farmers of America (FFA), Future Business Leaders of America (FBLA), and Distributive Education Clubs of America (DECA) play a role in career preparation and readiness for the state. CTSOs are integral parts of the “classroom curriculum and instruction, building upon employability and career skills and concepts through application

⁸ American Association of Family & Consumer Sciences. <https://www.aafcs.org/about/about-us/what-is-fcs>

⁹ What is a makerspace? <http://www.makerspaceforeducation.com/makerspace.html>

¹⁰ CTSOs extend teaching and learning through innovative programs, business and community partnerships and leadership experiences at the school, state, and national levels. CTSOs are a powerful avenue for helping our nation address key challenges such as workforce development, student achievement, economic vitality and global competitiveness. <https://www.ctsos.org/ctsos-2/>

and engagement” (www.ctsos.org/about-us). CTSO’s embody the student-centered learning approaches that Vermont has created a regulatory framework for, and model some of the best applications of integration and transfer of learning that demonstrate proficiency and student agency necessary for post-secondary success. CTSO competitions at the local, state, and national levels provide opportunities for students to demonstrate the skills they have learned in CTE programs.

For more than 15 years, the General Assembly has consistently provided support for CTSOs. In FY 2019 the allocation increased from \$100,000 to \$125,000 to support expansion of offerings to include HOSA.” These funds have supported and will continue to support the management structure of CTSOs in Vermont¹¹. Participation in these CTSOs is constituted primarily of CTE students, but the participation of general high school business students is on the rise in FBLA.

CTSOs are integrated components of many CTE programs and would fall under the oversight responsibilities of the RAB and the school board. The practical assessments for CTSOs can and should be recognized and applied as a means of demonstrating proficiency toward graduation requirements across the state.

Pre-Technical Studies

Act 189 contemplates pre-technical (introductory) CTE programming (courses) in the context of career readiness, while the existing rules, revised in the early 2000s, contemplate it as a means of intervention for students “for whom it has been determined that greater success can be experienced through intensive applied approaches to learning and career exploration and decision-making” (SBE Rule 2381.1). We no longer see these programs as an intervention for a sub-set of the population. Pre-technical exploratory and foundations courses (explored more in the next section) are and should continue to be viewed in the context of career development and recruitment strategies for CTE. From a policy standpoint, pre-technical programs should be included as key components of the state’s comprehensive approach to career and college counseling because of the role they play in helping students and families make informed choices about flexible- and career-pathways beyond high school.

The AOE’s model of career development is outlined in the [Career Development Progression](#) which organizes career development activities into four categories: career awareness, career exploration, career preparation, and career training. Career and college counseling, historically a responsibility of school counseling professionals, is one of the many activities schools may engage in to help students understand themselves and their aspirations, and to begin to understand both the world of work and the academic and technical skill requirements of various careers in which they may be interested. As part of the required personalized learning planning process, which should include the identification and alignment of goals to learning and flexible pathways, schools and CTEs have the tools in place to support student-informed and student-centered career and college advising.

¹¹ <https://vtcareertech.org/>

The AOE would recommend that the different conceptualizations between Act 189 and existing regulation can be resolved by understanding that connected learning – understanding why and what we learn and how it connects to the next opportunity and our future – is an effective strategy for maintaining engagement or re-engaging the disengaged learner.

Additionally, we see a need to require pre-technical courses to align to the career development progression and to PBGRs, and for the content of the pre-technical courses to have some standardization across the state. We also see a need to require CTE centers to offer pre-technical courses at each high school, coordinated through the RAB, so that they are consistently available to all students in a region, not just those that attend the high school attached to the CTE center.

A Reflection on Current State

From a Student's Perspective

Students do not generally understand what CTE is and how it operates. National research¹² suggests that school counselors and teachers are the most trusted “messenger” about CTE. This means that counselors and teachers need to have an informed perspective about the role career education and CTE play as contributors to post-secondary achievement for students.

In order to verify that the strategic vision and goals spoke to students, the AOE engaged in a listening tour at four CTE centers¹³. During that tour we heard 135 returning¹⁴ 12th grade students clearly articulate two things:

1. They often did not attend the informational sessions (required by state law) put on by the technical center at their home high school because they just assumed, based on their experience thus far, that the technical center was “just another school that had classes like my high school did.”
2. The majority of students told us that the first time anyone talked to them about careers and what they wanted to do after completing school was when they got to the CTE center. Every student said that they wished someone would have talked to them sooner.

The first point speaks to the need for technical centers to be able to conduct “outreach” (sometimes referred to as “recruiting”) activities in a non-contrived manner, and students should be encouraged to participate. One common practice, pulling students into the auditorium for 20 minutes during lunch time, is a contrived experience that limits the ability of the technical centers to reach students in a meaningful way, and by extension, may limit students’ pathway opportunities and aspirations.

We need to create opportunities for grade 7 and 8 students, remodel pre-technical programs for students in grades 9 and 10, and potentially restructure grade 11 and 12 programs. The central purpose for this remodeling and restructuring of the rules would be to ensure there is a connected system of experiences, deeply understood by adults and built on over time, that will ensure students have a seamless, meaningful, non-repetitive experience on their path to graduation and beyond. This requires a higher level of understanding, collaboration and coordination in our education systems than currently exists. The SBE rules governing RABs should be reviewed and re-written to ensure that each CTE service region provides these connected experiences.

¹² Siemens Foundation and AdvanceCTE. (2017). [The Value and Promise of Career Technical Education: Results from a National Survey of Parents and Students.](#)

¹³ Essex, Hartford, Middlebury, Rutland

¹⁴ These students were in a CTE program in the 11th grade as well.

Regional CTE centers use a combination of other practices, many coordinated with and/or initiated by partner schools and districts, to increase awareness about CTE programs and career opportunities among students in the middle and early high school grades. These practices include career days and career fairs offered on campus, after school activities, and summer camps to increase aspirations and awareness about careers. Some centers use teacher rounds, by which CTE teachers visit and disseminate information to students at partner high schools. The COVID-19 pandemic has caused CTE centers and their partner high schools to re-think how to increase awareness of CTE programs. Some centers have used federal funds to create videos that raise awareness of programs that are available within specific regions. These creative solutions are worth investigating further as we work to integrate practices forced upon us by the pandemic into ongoing practice.

The second point raised by students speaks to the need for broader investment in the career side of career and college counseling, and improved opportunities to participate in pre-technical programs. The SBE's rules 2386(2)¹⁵ already contemplates the role CTE centers should play in career counseling and development. The State Board of Education has also mandated that CTE centers should be the entities to align curricula with schools in the region, rather than to have it be a collaborative effort across the region (2386(3)).

Pre-Technical Courses and Programs

The SBE's Manual of Rules and Practices provides the policy structure for the introductory CTE programs. These rules were last updated in 2006. Sections governing the introductory programs (2381 & 2382) provide for two specific opportunities: pre-technical foundations (PT-F) and pre-technical exploratory (PT-X). The statutes refer to them as "try-out" courses (16 V. S. A. §1532(b)(4), §1562).¹⁶ The target audience for these programs are students in grades 9 and 10. Some CTE centers also allow students in grades 11 and 12 to participate in PT-F courses.

The current rules for PT-X require programs to meet for (an average of) 120 or 240 minutes per day at part-time or full-time centers, respectively. The rules for PT-F require that the programs meet for an average of 40 minutes per day at both part-time and full-time centers. It is important to note that the rules speak to an "average" which is to be used as a guideline. The rules specifically state a time requirement that must be met each week for an entire school year (defined as a minimum of 175 days). The rules do not speak to how long these courses should run, so there is some variability in course duration. They are offered on a quarter, semester, and yearlong basis.

CTE centers must request approval from the AOE in order to offer any program, including pre-technical programs. The RAB of a CTE center votes to approve the CTE center to offer new

¹⁵ "Technical centers shall be a regional resource for career development and provide information and training to middle and high schools in their region on applied academics, work-based learning, career exploration, and career decision making."

¹⁶ It is worth noting that the statutes are geared more toward helping students learn about CTE, and less about counseling and advising students to make informed decisions and to explore opportunities that complement their general education programming.

programs, including pre-technical programs. Once the Agency has reviewed the application for the program and determined that it meets the standards established in law and rule, the program is approved to operate. The AOE is working on developing a program review and re-approval process. The program approval process is a checkpoint for compliance with existing rules and statutes, and is an authorization to count the future enrollments in the program for funding purposes.

This issue of credit/experience recognition is complicated when it comes to offering pre-technical courses, especially in part-time centers. Pre-technical courses compete in the student's schedule with math, science, English, and other learning expectations and standards defined in statute and SBE regulations. At the end of the day, students graduate and receive diplomas from high schools, not CTE centers. Our CTE centers offer high quality educational program options, taught by professionals with business/industry experience, that prepare students for careers and college, but ultimately the high schools maintain control over how those experiences are recognized on the transcript.

Students also cannot afford to spend time riding a bus to participate in a pre-technical program, and then to spend more time riding a bus back to their home high school. We have the technology, the will, and the experience to deliver introductory courses online through Vermont Virtual Learning Cooperative (VTVLC) and other flexible delivery methods. River Valley Technical Center School District (RVTC), which is host to VTVLC, was given a grant in 2016-2017 to design and deliver an online business pathway program. The model relied on a Vermont licensed RVTC teacher, in addition to other Vermont licensed teachers and coordinators at local high schools and other CTE centers, to deliver some context-based lessons and to assist in the coordination of work-based learning experiences in the community in which the student lives. The program was well enrolled, indicating the potential for expanding the program.

Pre-technical Exploratory Programs

The aim of pre-tech exploratory (PT-X) programs, because of their longer length and required integration of math, science, and English, is to serve as an engagement strategy for students who would benefit from additional engagement strategies by introducing them to all of the career area programming at the technical center, and integrating career-related, contextualized academics. The requirement for all students to have a personalized learning plan in Vermont, along with the creation of the high school completion program means that the purpose and focus of PT-X programs must change. They still serve a purpose and they can and do play a game changing role for many students. We need a consistent, coordinated approach to the use and implementation of PT-X programs, with accountability and quality standards, and alignment with sending high school's graduation requirements.

Pre-Technical Foundations Programs

The stated aim of pre-tech foundations (PT-F) programs is to allow students to get a sense of the various career options within a career cluster.¹⁷ The PT-F courses are specific to a career cluster. As an example, in the health sciences career cluster, as part of a program of study the PT-F course in health sciences would naturally lead a student to additional studies in a health sciences program in grades 11 or 12 and then on to a certificate or degree in a more specific occupation or on a career path within the field of health sciences. Another function of PT-F courses, beyond providing connected learning experiences that lead to careers, is to help students make informed decisions, through exposure and limited structured experiences, before committing to a long-term program of study. This moves career related ideation and decision making into the secondary education system at public expense, and away from the post-secondary education system, at students' and families' personal expense.

Current SBE rules are silent about the number of days a program must meet, which causes confusion and apprehension on the part of administrators who want to offer the program, but leaves open the opportunity for flexibility. However, a strict reading of the rules can lead us to interpret them as being inflexible, though we want to create a policy environment that is clear and that allows for and encourages flexibility. A key component of inflexibility comes when CTE centers report student enrollments and FTE counts to the AOE. If the school has created an innovative program that meets the needs of students, those students may not be counted in the FTE report because the course didn't meet for a long enough period of time, or because the course beginning doesn't coincide with the student enrollment snapshots of October 15 and March 15. When surveyed, technical center administrators indicated that the structure and content of the rules is preventing them from offering more pre-tech programming, from offering them in locations other than the technical center, and from offering them in partnership with a high school within the context of school specific scheduling limitations.

This is further complicated by the CTE funding structure and SBE Rule (2389). This rule prevents CTE centers from reporting students who are enrolled in pre-technical programs for less than the required amount of time per day; programs are required to be designed and to operate for a pre-determined set of minutes per week, as discussed above. The time requirements also have implications for the awarding of academic credit/proficiency, especially for courses with embedded academic content that cannot be adequately covered in diminished time.

In the current structure, high schools that are attached to the regional centers enjoy an ease of access benefit. Due to co-location/close proximity, more students from the attached high school enroll in programs at the center than do students at sending/partner schools. This is true for regular CTE programs and it is also true for introductory programs. In order to ensure equity of

¹⁷ There are [16 Career Clusters](#) in the framework, representing 79 Career Pathways to help learners navigate their way to greater success in college and career. The framework also functions as a useful guide in developing programs of study bridging secondary and postsecondary systems and for creating individual student plans of study for a complete range of career options. <https://careertech.org/career-clusters>

access and not rely on the consequence of proximity, it is increasingly important for smaller partner high schools and CTE centers to collaborate on how to offer de-centralized, satellite, or virtual and/or hybrid introductory courses. We believe that lessons learned from the COVID-19 pandemic will help inform the most effective, long-term strategies for addressing this issue.

Changes in the funding formula and making changes to how we count students in CTE will ultimately help us achieve the goals of expanding access to CTE as a flexible pathway and in implementing comprehensive career counseling across the state. Any funding changes must guarantee two things: 1) that CTE centers have predictable funding to allow for innovative, flexible learning opportunities, described in this report and 2) that the sending middle and high schools are not financially penalized for providing access to those flexible pathways or for extended learning opportunities that support career and college readiness.

Credit Recognition

There is variability across the state, and even within CTE center regions, for how high schools recognize students' CTE experiences and how CTE centers design learning experiences and pathways. There is also variability in terms of the quality, rigor, and alignment of CTE programs to the needs of employers and high-skill, high-wage, and in-demand occupations. However, the State also has effective models that could offer insight and opportunities for scale. Central Vermont Career Center is a strong working example of how a regional CTE center, serving multiple high schools, was able to work with those high schools to develop a formal agreement about how all high schools would consistently recognize student experience in the CTE programs. In September 2020, the AOE started the process of updating program standards for all CTE program areas. The work mirrors the work of Central Vermont Career Center and aims to bring greater equity to the recognition of student experience in CTE programs across the state. The final step will be to update State Board Rules related to credit recognition and other areas mentioned in this report.

Alternative Delivery Models

There are emerging opportunities to deliver computer science/cybersecurity pathway courses and programs, as well as video/audio production technology programs via VTVLC. Based on the state-wide CTE perception survey (2018) that informed the strategic vision and goals, there is a desire for introductory programs to be offered in locations other than the technical center. This requires a higher level of coordination and collaboration between technical center administrators and teachers, and high school administrators and teachers.

As a result of the emergency response to the COVID-19 pandemic, VTVLC has played an important role in providing expanded access to online and blended learning in Vermont. The AOE supported, through significant grant funding, an expansion of VTVLC programmatic offerings, training and technical support at no or low cost to supervisory unions/districts, schools, CTEs and AEL providers to offer fully remote and hybrid learning content to students and professional learning for teachers, including CTE teachers. The response to the pandemic required rapid prototyping when it came to online and blended learning, an asset when we

consider future opportunities but a reflection of missed opportunities in the past to leverage technology and innovation to expand opportunities for students.

Inequities in access to internet and technology would have emerged as significant issues as we advanced a plan to expand access to CTE via technology without the pandemic. However, Vermont's emergency closure and response rapidly moved Vermont's education system in a direction it had not planned and highlighted many inequities in access to food, internet, technology, and other services that have historically been contingent on a physical location (school) and time of day. And, this has presented an opportunity to resolve those inequities sooner. As we near the close of the 2020-2021 school year, more CTE teachers are teaching in an online or blended environment than ever before. From that experience we will better understand the opportunities and limitations of using technology to reach and teach students in career technical subjects that have, until now, been delivered in person and have relied on hands-on instruction with practical demonstrations of skills.

A Future Vision for an Equitable and Sustainable CTE System

The Agency of Education, and the State Board of Education (SBE) through its endorsement of the strategic vision and goals for CTE, highlight the need for systems to be equitable, efficient, integrated, and collaborative. These goals signal that comprehensive counseling, advising, and collaboration and coordination are key investment opportunities to ensure equity in career (and college) readiness across the state.

Our systems would benefit from regulatory language that encourages, incentivizes and/or requires secondary schools, CTE centers, and post-secondary CTE entities, to work collaboratively to build coordinated career pathways with shared goals and outcomes for students, and with shared ownership and public accountability for those efforts.

There is no consistent entity in each region of the state that has its eye equally on all elements of the nexus of education, workforce development, employer needs, and post-secondary opportunities.

Secondary schools and CTE centers have a shared responsibility for ensuring access to high quality educational experiences that lead to career and college readiness. Regional Advisory Boards can and should play a lead role in the coordination of career related opportunities and programs throughout each region of the state. We should be strengthening the role that RABs play in helping to operate the career technical centers and to facilitate the collaboration and coordination across different stakeholders and educational contexts to support the shared goal that high school graduates are career and college ready, with the skills that allow them to meet the workforce needs of Vermont industry and earn a livable wage.