Teacher Recruitment Education and Preparation (TREP) Program and Pathways in Technology Early College High Schools (P-TECH) Working Group Report

Submitted to:

Joint Budget Committee

By:

TREP and P-TECH Working Group

December 2025

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Introduction

House Bill 25-315 required the Colorado Department of Education (CDE) to convene a working group that included educators to make findings and recommendations concerning the effectiveness of the Teacher Recruitment Education and Preparation Program (TREP) and the Pathways in Technology Early College High Schools (P-TECHs).

The Department accepted applications for the following representatives for the working group:

- Business community representative (1)
- Community representatives for P-TECH (2)
- Community representatives for TREP (2)
- Non-P-TECH district representative (3)
- Non-TREP district representatives (3)
- P-TECH district representative (1)
- Representative from an educator preparation program (1)
- TREP district representative (1)

Working Group Members and Meetings

The working group was composed of the following 14 members who met virtually six times from October 2025 to November 2025. Attendance by members varied depending on their availability. All meetings were accessible to the public via Zoom.

Audrey Hinshaw – Manager of Operations, Behavioral Health at UCHealth (Business Representative)	Madeline Brockish – Coordinator of College Before Graduation at Boulder Valley School District (Non-P-TECH District Representative)
Raymond Chard – Executive Director of High School Programs Aims Community College (Community P-TECH Representative)	Tyler Schlagel – Concurrent Enrollment Coordinator at Thompson R2-J (Non-P-TECH District Representative)
Kelly Mitchell – Founder/Principal Consultant of Inclusive Design Group (Community P-TECH Representative)	Kari Michal – Teacher at Buffalo RE-4J (Non-TREP District Representative)
Jessica Buckmaster – College Credit in High School Director at Metropolitan State University of Denver (Community TREP Representative)	Matt Walker – Principal at Dolores Re 4a (Non-TREP District Representative)

Naimah Coleman Simonson – Director of Education at Community College of Denver (Community TREP Representative)	Diana Zakhem – Director of Secondary Success at Englewood Schools (Non-TREP District Representative)
Liz Qualman – Director of Teacher Education at Colorado Mountain College (Education Preparation Program Representative)	Brandon Shaffer – Executive Director of P-TECH at St. Vrain Valley School District (P-TECH District Representative)
Kelly Boren – Principal at Byers Junior-Senior High (Non-P-TECH District Representative)	Madison Tortessi – CTE Director at Canon City High School (TREP District Representative)

CDE Analysis of Programs in Scope

The department conducted an independent analysis of the programs and presented the following program data to the working group to support the development of their findings and recommendations.

Teacher Recruitment Education and Preparation (TREP) Program

The TREP program was created and authorized by SB21-185. The TREP program creates the opportunity for qualified students in an educator career pathway to concurrently enroll in postsecondary courses and earn college credit at no tuition cost to them or their families, for up to two years after the 12th grade year.

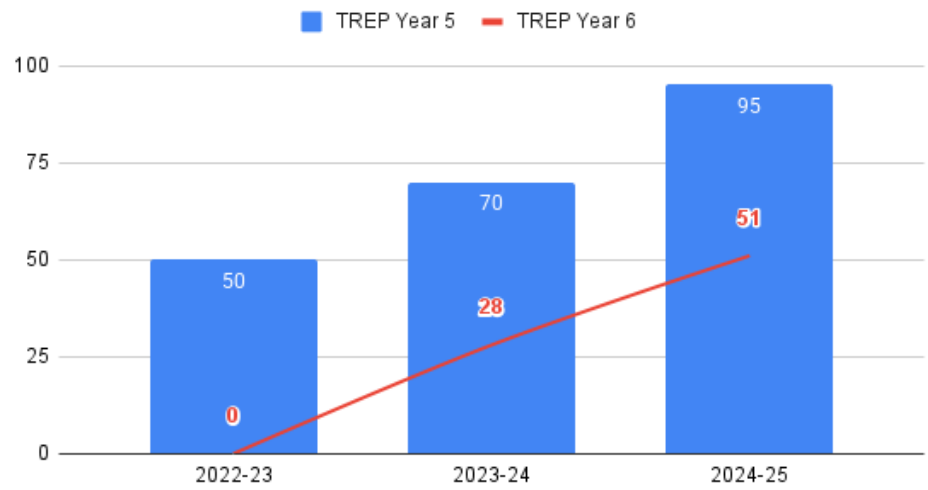
Qualified students who have completed one course in the Educator Pathway during their 12th grade year may be eligible to participate.

Student Enrollment

The first cohort of TREP students began in 2022-23. Student participation and retention from Year 1 to Year 2 has steadily grown over the past three years as evidenced by the following student enrollment data from CDE's Student October Count data collection.

TREP enrollment is capped at the student Full Time Equivalent (FTE) amount appropriated in the annual long bill. In 2022, the cap was 200. In 2023 and 2024, the cap was 250.

Figure 1. *TREP Enrollment Data (2022-2024) from Student October*



Based on Figure 1:

- From 2022-23 to 2023-24:
  - TREP student enrollment in Year 5 grew by 40%.
  - The TREP student retention rate for Cohort 1 from Year 5 to Year 6 was 56%.
- From 2023-24 to 2024-25:
  - TREP student enrollment in Year 5 grew by 36%.
  - The TREP student retention rate for Cohort 2 from Year 5 to Year 6 was 73%.
- Since its inception, 215 students have enrolled in the TREP program.

Please note, Student October Count data for 2025-26 is not yet available.

Local Education Provider Participation

The following table lists the local education providers that have participated in TREP since 2022-23, the first year of the program.

Table 1. *Participating Local Education Providers in TREP*

2022-23	2023-24	2024-25
Adams 12 Five Star Schools	Academy 20	Academy 20
Adams-Arapahoe 28J	Adams 12 Five Star Schools	Adams 12 Five Star Schools

Boulder Valley Re 2	Adams-Arapahoe 28J	Adams-Arapahoe 28J
*Canon City RE-1	Boulder Valley Re 2	Boulder Valley Re 2
Cherry Creek 5	*Canon City RE-1	*Brush RE-2(J)
Denver County 1	Charter School Institute	*Canon City RE-1
District 49	Cherry Creek 5	Charter School Institute
*Elizabeth School District	Colorado Springs 11	Cherry Creek 5
Englewood 1	Denver County 1	Colorado Springs 11
Jefferson County R-1	District 49	Denver County 1
Littleton 6	Douglas County Re 1	District 49
Mesa County Valley 51	*Edison 54 JT	Douglas County Re 1
*Peyton 23 Jt	Education reEnvisioned BOCES	*Edison 54 JT
Poudre R-1	*Elizabeth School District	*Estes Park R-3
Pueblo County 70	Englewood 1	Fountain 8
St Vrain Valley RE1J	*Estes Park R-3	Greeley 6
*Summit RE-1	*Fort Morgan Re-3	Jefferson County R-1
Westminster Public Schools	Greeley 6	*Lake County R-1
	Jefferson County R-1	Lewis-Palmer 38
	*Lake County R-1	Littleton 6
	Littleton 6	Mesa County Valley 51
	Mapleton 1	*Platte Valley RE-7
	Mesa County Valley 51	Poudre R-1
	Poudre R-1	Pueblo County 70
	Pueblo County 70	*Roaring Fork RE-1
	School District 27J	School District 27J
	St Vrain Valley RE1J	St Vrain Valley RE1J
	Thompson R2-J	Thompson R2-J
	Westminster Public Schools	Westminster Public Schools

Total LEPs in 2022-23: 18 Urban/Suburban: 14 *Rural: 4	Total LEPs in 2023-24: 29 Urban/Suburban: 23 *Rural: 6	Total LEPs in 2024-25: 29 Urban/Suburban: 22 *Rural: 7

State Cost

The state cost from per pupil revenue (PPR) at the extended high school rate for the TREP program has increased from the first year as the program continues to grow. In addition, the extended high school rate increases at the rate of inflation each year.

Table 2. *State Cost of TREP Over Three Years*

Total PPR: 12th Grade (5th Year and Beyond)	TREP Cost
FY24-25	$ 973,180.00
FY23-24	$ 814,983.40
FY22-23	$ 373,455.00

Student Credential Outcomes

A high-level analysis of student credential outcomes data from matching student-level information in the Student October Count data collection with the National Student Clearinghouse database through May 2025 revealed:

- 4.5 percent of students in the dataset (221 total) have earned a credential so far in the TREP program.

Table 3. *Credentials Earned by TREP Students*

Quantity	Credential
4	**Associate of Arts**
2	Elementary Teacher Education degree with designation (DWD) for statewide transfer to a 4-year public institution
2	Associate of Arts
1	**Associate of General Studies**
5	**Certificates**
2	Assistant Early Childhood Teacher

1	Early Childhood Teacher
1	Early Childhood Entry
1	Early Childhood Education: Infant/Toddler Supervisor

- 129 students in the dataset were still enrolled in May 2025, including four of the above 10 students that transferred to a four-year university (two of them being the students with a DWD).

Please note, the National Student Clearinghouse database does not include course information, only enrollment dates tied to institutions of higher education, graduation dates, and credential attainment.

Pathways in Technology Early College High Schools (P-TECH)

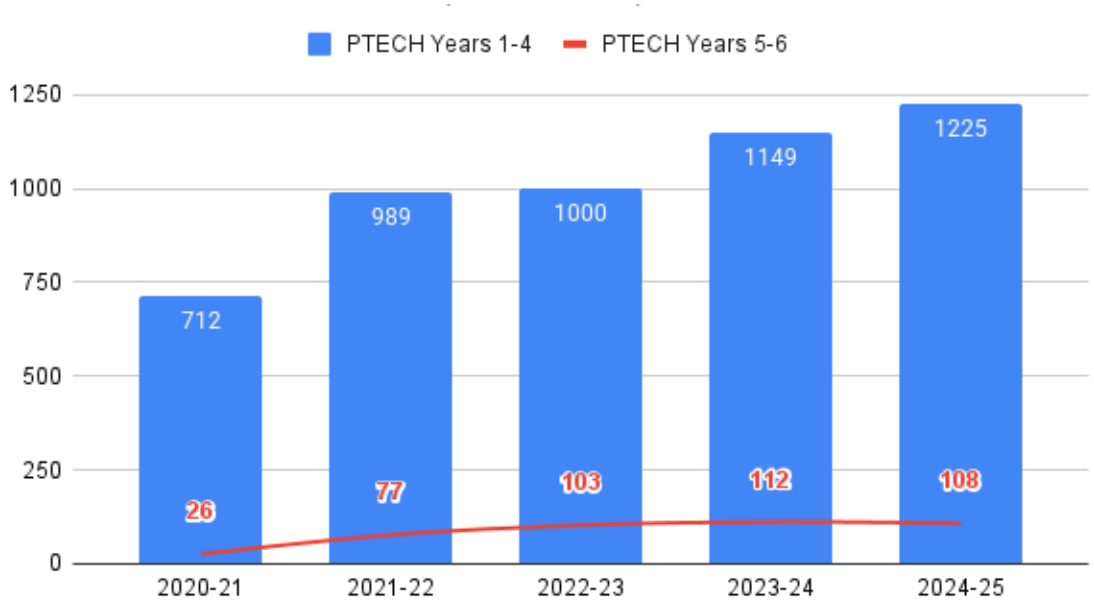
P-TECHs were created in HB15-1270. P-TECHs consist of an innovative partnership between a school district, a community college(s), and one or more local high growth industry employer(s). P-TECHs are designed for students to begin in 9th grade on a specific career pathway in a cohort model. Students have up to six years to graduate with both a high school diploma and an industry-recognized associate degree, in addition to gaining relevant workplace skills.

School districts, BOCES, institutions of higher education and dedicated high-growth industry employer partners who want to develop and operate a six-year stand-alone public high school or program within an existing high school focused on career and technical education programming submit a P-TECH application (with assurances from the higher education and industry partners as evidence of their commitment) to the Colorado Department of Education for approval. Coordinated by the Colorado Workforce Development Council, a panel of experts from the Colorado Department of Higher Education, the Colorado Community College System, school districts and industry review submitted P-TECH applications.

Student Enrollment

The first cohort of P-TECH students began in 2016-17. Student participation in P-TECH in Years 1-4 has incrementally grown since 2020-21 (the first reported data), while student enrollment as reported in Years 5-6 has remained flat the past three years as demonstrated by the following student enrollment data from CDE's Student October Count data collection.

Figure 2. *P-TECH Enrollment Data (2020-2024) from Student October*



Based on Figure 2:

- From 2020-21 to 2021-22:
  - P-TECH student enrollment in Years 1-4 grew by 39%.
  - P-TECH student enrollment in Years 5-6 grew by 196%.
- From 2021-22 to 2022-23:
  - P-TECH student enrollment in Years 1-4 grew by 2%.
  - P-TECH student enrollment in Years 5-6 grew by 34%.
- From 2022-23 to 2023-24:
  - P-TECH student enrollment in Years 1-4 grew by 15%.
  - P-TECH student enrollment in Years 5-6 grew by 9%.
- From 2023-24 to 2023-24:
  - P-TECH student enrollment in Years 1-4 grew by 7%.
  - P-TECH student enrollment in Years 5-6 decreased by -4%.

Please note, Student October Count data for 2025-26 is not yet available.

Additionally, P-TECH student enrollment in Years 1-4 is most likely underreported as districts can submit for per pupil revenue (PPR) based on a student's regular high school class schedule and not necessarily their enrollment in a P-TECH program.

Local Education Provider Participation

The following table lists the approved P-TECH programs since 2016-17. School districts submit a more minimal application if they want to add a new career pathway at a high school that was previously approved. Full details of pathways, partnering community colleges, and industry can

be found online: https://ed.cde.state.co.us/postsecondary/p-tech/approvedp-techchoolsprograms

Table 4. *Participating Local Education Providers and P-TECH Programs*

Year	District	P-TECH Program
2016-17	Adams 12 Five Star Schools	Northglenn High School P-TECH
	St. Vrain Valley School District	FalconTech – Skyline High School
	District 49	Power TEC – James Irwin Charter Schools
2018-19	*Cañon City RE-1	*Cañon City High School
	Douglas County School District	STEM School Highlands Ranch
2019-20	Mesa County Valley District 51	Warrior Way High – Central High School
	St. Vrain Valley School District	WarriorTech – Frederick High School
2020-21	Greeley-Evans School District 6	Greeley Central High School
	Greeley-Evans School District 6	Greeley West High School
	Greeley-Evans School District 6	Jefferson High School
	Denver County 1	Abraham Lincoln High School P-TECH Academy
2021-22	Mesa County Valley District 51	District Career Technical School Career Center
	Mesa County Valley District 51	Grand Junction High School
	*Eagle County School District RE-50	*Battle Mountain High School P-TECH
	Eagle County School District RE-50	*Eagle Valley High School P-TECH
	Poudre School District	Poudre High School Manufacturing P-TECH
	St. Vrain Valley School District	RaptorTECH – Silver Creek High School
2022-23	Fremont Multidistrict Initiative (FMI)	*Cañon City High School

	*Fremont Multidistrict Initiative (FMI)	*Florence Jr/Sr High School
	*Fremont Multidistrict Initiative (FMI)	*Cotopaxi Schools
2023-24	St. Vrain Valley School District	Trojan Tech – Longmont High School
2024-25	Adams-Arapahoe 28J	ConstrucTECH – Vista PEAK Preparatory Academy
	Adams-Arapahoe 28J	ConstrucTECH – Gateway High School
2025-26	Adams-Arapahoe 28J	Aurora Central High School
	Adams-Arapahoe 28J	Rangeview High School
	Adams-Arapahoe 28J	Vista PEAK Preparatory Academy
	Adams-Arapahoe 28J	Gateway High School
	Douglas County School District	Legacy Campus
	Total: 13 districts Urban/Suburban: 9 *Rural: 4	Total: 28 programs Urban/Suburban: 22 *Rural: 6

State Cost

The state cost from per pupil revenue (PPR) at the extended high school rate for P-TECHs in Years 5 and 6 has increased from FY19-20 as more programs were approved and more students enrolled. In addition, the extended high school rate increases at the rate of inflation each year.

Table 5. *State Cost of P-TECH Over Six Years*

Total PPR: 12th Grade (5th Year and Beyond)	**P-TECH Cost**
FY24-25	$ 1,106,352.00
FY23-24	$ 939,627.92
FY22-23	$ 781,650.00
FY21-22	$ 561,371.89
FY20-21	$ 193,708.06
FY19-20	$ 23,379.69

Student Credential Outcomes

A high-level analysis of student credential outcomes data from matching student-level information in the Student October Count data collection with the National Student Clearinghouse database through May 2025 revealed:

- Thirteen percent of students in the data set (1097 total) have earned a credential so far in the P-TECH program for a total of 236 credentials.
- Students can earn multiple credentials during their participation in P-TECHs. For instance, one student earned five manufacturing technology certificates and an associate of applied science degree in machining technology. Another student earned five certificates related to architecture/construction and earned two associate of applied science degrees in architecture and construction in the same semester.

Table 6. *Credentials Earned by P-TECH Students*

Quantity	Credential
7	**Bachelor's Degrees**
3	Bachelor's of Arts
1	Finance
2	Political Science
4	Bachelor's of Science
1	Interdisciplinary Studies
1	Business Admin: Finance
1	Information Science
1	Data Science
106	**Associate of Applied Science**
1	Advanced Emergency Medical Technician
1	Advanced Manufacturing
3	Architectural Engineering Technician
1	Automotive Technology

1	Build & Constr Tech Carpentry
1	Building/Construction Site Management
6	CAD: Mechanical
1	CAD: Robotics & Automation
2	CIS Networking Security
2	Computer Aided Drafting/ R&A
59	Computer Information Systems
1	Construction Management Tech
1	Cybersecurity
1	Fire Science Technology
2	Mechanical Engineering Technician
2	Manufacturing Tech: Machining Technology
1	Manufacturing Tech: Welding Technology
1	Programming
9	Robotics and Automation Tech
1	Software Development/Security
4	Web Developer
5	Welding Technology
5	**Associate of Arts**
1	Environmental Studies
1	Associate of Arts
3	Business degree with designation (DWD) for statewide transfer to a 4-year public institution
1	**Associate of Science**
8	**Associate of General Studies**

99	Certificates
1	Adv Emergency Medical Tech
2	Adv Solidworks Skills
3	Architectural Technology
1	Asst. Early Childhood Teacher
1	Auto Collision Tech-Refinish
1	Auto: Fuels & Emissions
1	Auto: Transmission
5	Basic AEC Drafting
1	Basic Automation
4	Basic CAD
1	Basic Emergency Medical Tech
1	Basics of Carpentry
1	Basics of Construction Management
1	Brakes
2	Business Fundamentals
10	Business Specialization
2	CAD - Advanced
1	Carpentry Adv. Applications
1	Carpentry Fundamentals
1	CIS Application Spec Cert
2	CIS: Cyber Defense
1	CIS: IT Certification Prep
2	Computer Programming

1	Construction Fundamentals
2	Construction Professional
1	Early Childhood Teacher Entry
1	Electrical
1	Electronic Assembly
2	Emergency Medical Tech Basic
3	Emergency Medical Technician
1	Fire Science Basic Firefighter
1	Firefighter Academy
1	Firefighter I
1	Food Preparation
2	Gas Metal Arc Welding (GMAW)
2	Gas Tungsten Arc Weld (GTAW)
1	Intermediate Emergency Medical Tech
1	Introduction To Carpentry
1	Law Enforcement Technician
2	Manual Transmission
1	Medical Office Admn Assistant
1	Microsoft Office Applications
2	Modeling Design
3	Nurse Aide
1	Paramedic
1	Practical Nursing (PN)
1	Professional CAD
1	Professional CAD-Architecture

2	Programming
1	Project Estimating
1	Revit Skills
1	Securities
2	Shield Metal Arc Weld (SMAW)
1	Web Development
3	Welding
2	Welding - Basic Genl Job Entry
1	Welding Technology, Arc Welding Processes
1	Welding Technology, Metal Fabrication
1	Welding Technology, Pipe Welding
1	Welding Technology, Welding Technician
1	Welding Technology, Metal Cutting/Gouging
10	**Technical Certificates**
1	Bakeshop Production
1	Electric Line Worker
1	Entry-Level Pharmacy Tech
1	MFG Tech: Basic Welder
1	MFG Tech: CAD/CAM
1	MFG Tech: CNC Machinist
2	MFG Tech: Entry Level Machining
1	MFG Tech: Machine & Manufacturing Trades
1	MFG Tech: Manual Machinist

- 350 students in the dataset were still enrolled in May 2025.

Please note, the National Student Clearinghouse database does not include course information, only enrollment dates tied to institutions of higher education, graduation dates, and credential attainment.

Working Group Recommendations Regarding Teacher Recruitment Education and Preparation Program (TREP)

Background

The **2024-25 Colorado Educator Shortage Survey** reports that:

- **14.12% (7,792)** of all teaching positions statewide required hiring this year — an increase from **12.41% (6,911)** in the 2023–24 Educator Shortage Survey.
- **9.2%** of those positions remain unfilled or filled through **shortage mechanisms**, including emergency authorizations and long-term substitutes.
- Rural and small rural districts continue to face a **6.92% shortage rate**, which is roughly three times higher than non-rural areas.

Within this context, TREP has served over 200 students statewide, many of whom are progressing steadily through concurrent enrollment and postsecondary coursework. Because the program launched in Fall 2022, the first potential bachelor's degree completers will not graduate until May 2026, with licensure and workforce data expected by Fall 2026-27.

Therefore, TREP remains in an early yet promising stage of implementation — already showing persistence and engagement that exceed national trends.

Recommendation 1: Continue TREP Funding and Implementation as Prescribed Through 2029–30

Rationale

- It is premature to evaluate the Return on Investment (ROI), as no students have yet reached degree completion or licensure since inception.
- Colorado's vacancy rate has *increased* year over year, making TREP more relevant than ever.
- TREP enrollment shows early evidence of **student persistence and commitment**, with the majority continuing across multiple terms.

If the program's 146 unique students achieve a 50% completion rate — which is nearly double the national teacher preparation completion average (~26%), but still below or within Colorado's teacher preparation institutional norms (35–75%) — the program would yield approximately 73 future educators from its current cohort.

Impact Projection

- 73 new teachers entering the profession through the TREP opportunity would shrink Colorado's unfilled position gap by roughly 0.9% (73 ÷ 7,792).
- Given that 35% of TREP students are from rural areas, the program could fill up to 26 rural educator positions, reducing the rural vacancy rate by an estimated 0.5–1% in those hardest-hit communities.

📈 Projected Statewide Impact of TREP Growth (AY 2026–2031)

Assumptions

- **Current students (baseline): 146** (95 in Year 5 and 51 in Year 6 unique students).
- **New TREP entrants:** 100 additional students beginning **each academic year starting AY 2026-27**.
- **Completion rate:** 50% (higher than national average of ~26%, lower than many Colorado EPPs which are between 35% to 73%).
- **Statewide educator vacancies (2024-25):** 7,792 teacher positions (14.12% vacancy rate).
- **Rural participation:** 35% of TREP students are enrolled through rural-serving institutions.
- **Cohort completion-to-licensure lag:** 3-4 years post-enrollment.

Table 7. *TREP Cohort-by-Cohort Projection Through 2030*

Academic Year	Cumulative TREP Enrollment	Estimated Completers (50%)	New Teachers Added (Cumulative)	% Reduction of Statewide Vacancy (7,792)	Rural Teachers (35%)
2024-25	Current cohort: 146 • 95 in Year 5 • 51 in Year 6	73	73	.9%	26

2025-26					
2026-27	246 (+100 new entrants)	123	+50	1.6%	43
2027-28	346 (+100)	173	+50	2.2%	61
2028-29	446 (+100)	223	+50	2.9%	78
2029-30	546 (+100)	273	+50	3.5%	96

Legislative Recommendations

- Commit to TREP funding at current levels at least through FY2027-28 (three more years, but five would be ideal).
- Require annual reporting on enrollment, persistence, and early degree milestones, but defer ROI determinations until early licensure and workforce data are available in Fall 2026-27.

Recommendation 2: Strengthen Statewide Data Integration for Longitudinal Tracking

Rationale

Colorado currently lacks a unified data system linking **enrollment → degree → licensure → employment** for teacher preparation pathways. Enrollment data alone cannot demonstrate impact; the state must be able to connect TREP student trajectories to eventual workforce entry.

Legislative Recommendations

- Fund a **joint CDE-CDHE longitudinal data initiative** to track all TREP and educator preparation students through:

    1. Enrollment and credit attainment (via CDHE/NSC)
    2. Licensure issuance (via CDE Talent & Licensing Division)
    3. Employment in Colorado school districts (via HR data and the Educator Shortage Survey).

- Require a **first integrated outcomes report by Fall 2027**, coinciding with the first TREP completers.
- Incorporate this data into the **Postsecondary Workforce Readiness (PWR)** indicator framework in the state's K-12 accountability system to quantify workforce impact across regions and content areas.

Recommendation 3: Expand Support for Rural and Small-District Partnerships

Rationale

- Rural districts continue to face a **6.92% shortage**, compared to ~1.9% in non-rural areas, and rely heavily on emergency authorizations and substitutes.
- Many small districts lack infrastructure to host TREP students or provide qualifying concurrent enrollment courses.
- Rural participation in TREP has been strongest where higher-ed partners or other intermediaries offer online or apprenticeship-based delivery.

Legislative Recommendations

- Create a Rural TREP Partnership Grant or Funding Opportunity to:
    - Help districts form consortia with colleges and/or intermediaries to offer online EDU coursework or youth teacher apprenticeships.
    - Offset administrative and mentorship costs.
    - Incentivize partnerships aligned to PWR College Credit and Career & Technical Education (CTE) initiatives.
- Prioritize special education, early childhood, and multilingual education pathways in rural expansion efforts.

Recommendation 4: Align Postsecondary Workforce Readiness (PWR) and TREP Pathways to Expand Annual Enrollment by 100 Students

Rationale

- The Postsecondary Workforce Readiness (PWR) initiative already provides districts with frameworks for earning college credit, work-based learning experiences, and credential stacking in high-demand sectors.
- TREP naturally fits within this ecosystem as a PWR-aligned education pathway, but current systems treat them separately, which limits district participation and student awareness.
- By aligning PWR infrastructure (funding, district dashboards, and accountability metrics) with the Teacher Recruitment Education Program (TREP), the state could increase participation by approximately 100 or more new students each academic year, addressing both teacher and paraprofessional shortages.

Mechanisms for Alignment

- Allow PWR-approved capstone pathways in teaching to count toward TREP eligibility and funding.
- Integrate TREP concurrent enrollment and apprenticeship options into PWR's official "college credit plus work-based learning" model.
- Establish a joint guidance document between CDE's Postsecondary and Workforce Readiness Office and the Educator Talent Office to ensure that districts understand how to launch teaching-focused PWR pathways.
- Create an annual recruitment target of +100 students statewide, with incentives for rural and small districts that adopt the model.

Projected Impact

- Expanding TREP enrollment by 100 new students annually could potentially yield **an additional 50 licensed educators per year** (assuming a 50% completion rate).
- Within five years, this alignment could add **~250 more teachers** on top of the existing TREP pipeline — bringing the program's total projected contribution to **~565 new educators by 2031**, reducing statewide vacancies by **7–8%** and rural vacancies by **3–4%**.

Conclusion

Colorado continues to experience significant educator shortages, particularly in rural regions and high-need disciplines such as special education, early childhood, and multilingual education. The **Teacher Recruitment Education Program (TREP)** is a scalable, equity-focused strategy to strengthen the state's teacher pipeline — but it requires time, data, and targeted rural support to demonstrate its full impact.

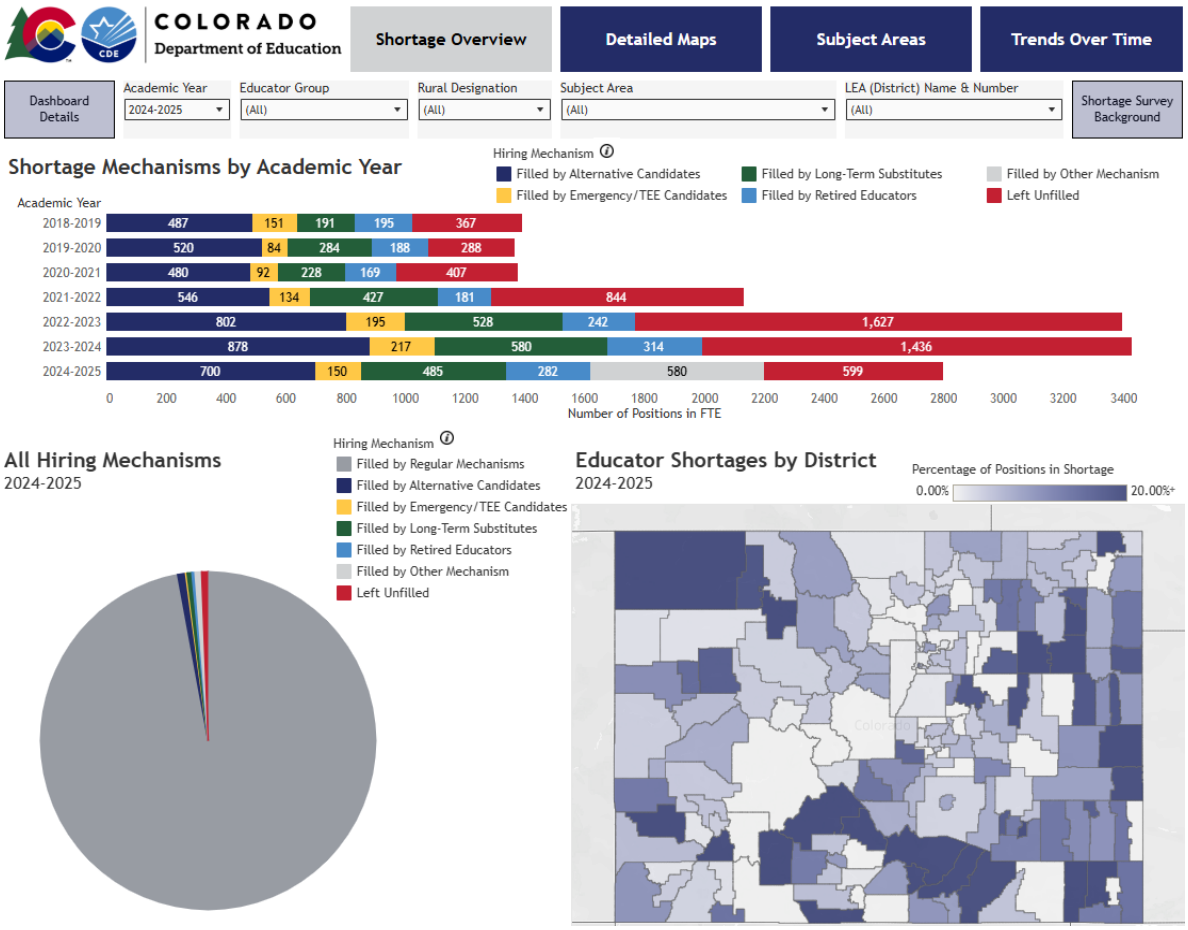
By sustaining TREP funding at least through 2027-28, integrating statewide data systems, and expanding rural partnerships, Colorado can realistically add ~115 new licensed teachers within the next two academic cycles — a measurable step toward closing the state's 7,800-position vacancy gap while cultivating a more stable, homegrown educator workforce.

In addition, by **aligning the state's Postsecondary Workforce Readiness (PWR) initiative with TREP**, Colorado could expand enrollment by at least 100 or more new students each year, leading to approximately 50 additional completers annually. Over five years, this alignment could produce over 500 newly licensed educators — reducing statewide vacancies by an estimated 7-8% and rural shortages by 3-4%.

Together, these four strategic actions—**continued funding, longitudinal data integration, rural expansion, and PWR alignment**—position TREP as one of Colorado's most powerful

tools for addressing persistent teacher shortages and ensuring every community, especially rural ones, has access to qualified, locally prepared educators.

Figure 3. *Educator Shortage Survey Results Dashboard*



Working Group Recommendations Regarding Pathways in Technology Early College High Schools (P-TECH)

Background: Keeping P-TECH Anchored in Career Pathways

Colorado's **Pathways in Technology Early College High Schools (P-TECH)** program remains one of the state's strongest models for connecting education to economic mobility. As the **2024 Colorado Talent Pipeline Report** highlights, Colorado continues to face persistent workforce shortages in key sectors such as healthcare, education, information technology, skilled trades, and advanced manufacturing. These shortages are especially acute in **rural and smaller school district communities**. The program must remain focused on career-connected education—linking high school, community college, and industry into a seamless 9-to-14 pathway.

P-TECH directly addresses these talent gaps by providing a **structured 9-to-14 pathway** that blends high school, college, and work-based learning into one coherent system. The program equips students—many of whom are **first-generation, multilingual, or economically disadvantaged**—to enter high-demand fields while earning industry-recognized credentials and degrees.

The program's outcomes demonstrate its dual value as both a **career pathway** and a **student success model**. Local data confirm significant improvements in attendance, discipline, and postsecondary persistence, proving that when learning is connected to purpose, student engagement and workforce participation rise together.

The model is not only a degree pathway but also a high-school success and workforce-readiness framework that produces measurable academic, behavioral, and economic gains. Across Colorado's established programs—St. Vrain Valley, Northglenn, Greeley-Evans 6, and James Irwin Power Technical—data show that P-TECH yields outstanding student outcomes, drives local workforce participation, and provides significant savings to families and the state.

Strengthening Program Effectiveness

Together, these recommendations increase the effectiveness and efficiency of Colorado's P-TECH model by addressing the three factors that most determine program success: funding alignment, data accountability, and industry connectivity.

A 9-to-14 funding model ensures that districts, colleges, and employers can plan for the full duration of the program, stabilizing staffing and supports during the critical 9th–11th grade years

when student engagement and career identity are formed.

A statewide data and outcomes system enables continuous improvement—allowing state leaders to identify which programs deliver the best graduation, credential, and employment outcomes, and to redirect resources toward effective practices.

Structured employer partnerships and regional collaboration strengthen the relevance and sustainability of learning experiences, ensuring students acquire the competencies employers actually need in Colorado's high-demand sectors.

By grounding P-TECH in these structural improvements, the state can move from isolated local successes to a cohesive statewide strategy—one that improves student outcomes, strengthens the talent pipeline, and delivers measurable returns on public investment.

Recommendation 1: Develop a Comprehensive 9-to-14 Funding Model

Purpose:

Current funding covers only grades 13–14 even though the most significant costs—staffing, industry coordination, dual-credit coursework—occur in grades 9–12.

Actions:

- Establish a **P-TECH funding formula** that follows students for all six years (9–14), aligned with verified program costs.
- Provide **start-up support** for districts and colleges launching new or rural programs.
- Recognize early completion through outcome-based adjustments rather than one-size funding.

Evidence of Value:

- **St. Vrain Valley:** 223 graduates; 67 entered the workforce in tech, business, or pharma manufacturing; 102 pursued higher degrees in the same pathways with **75% in-field continuation.**
- **Northglenn:** 55 completers; attendance 92.7% (vs 83.6%), GPA > 3.0 for 70% of students; zero weekly discipline incidents (vs 19 school-wide).
- **Greeley-Evans 6:** 100% on-time graduation (vs 87%); attendance 89% (vs 84%).

These results demonstrate high ROI even before full cost alignment.

Recommendation 2: Establish a Statewide P-TECH Data & Outcomes System

Purpose:

Locally collected data reveal excellence but remain fragmented. Statewide visibility is essential to demonstrate fiscal and academic impact.

Actions:

- Create a **centralized P-TECH data dashboard** integrating CDE, CDHE, and workforce datasets.
- Require annual cohort reporting: enrollment, demographics, credits earned, credentials, employment and wage outcomes.
- Include employer participation metrics (internships, certifications, hires, retention).

Evidence of Impact:

- **Northglenn:** Students earned 6,855 college credits (≈ 64 per graduate), saving families >$2.3 million in tuition.
- **St. Vrain:** 344 students completed paid internships (≥ 133 hours each, 3 college credits); 16 industry certifications since 2019.
- **NSC statewide data:** 57% of P-TECH graduates continue to four-year universities—remarkable given first-gen, FRL, ELL, and disability demographics.

A unified data system will allow Colorado to quantify P-TECH's contribution to workforce pipelines and student equity.

Recommendation 3: Manage Growth Strategically Around Workforce Demand

Purpose:

Unbounded expansion could erode quality. Growth must target high-need sectors and regional labor markets.

Actions:

- Approve new P-TECH programs based on alignment with **state talent-pipeline priorities** (advanced manufacturing, healthcare, IT, education).

- Require formal partnerships with local employers and postsecondary institutions before authorization.
- Periodically review site performance to guide future investment.

Evidence of Model Strength:

- **Behavioral Outcomes:** In St. Vrain, only **1 suspension in 3 years** among P-TECH students (vs 171 in non-P-TECH).
- **College Continuation:** Across cohorts, dozens of graduates have progressed into four-year degrees in engineering, business, chemistry, and biotechnology.
  These outcomes confirm P-TECH as both a **workforce strategy and a school-success model.**

Recommendation 4: Strengthen Industry and Community Partnerships (especially Rural & Smaller Districts)

Purpose:

Employer engagement determines program quality, yet many districts—particularly rural—struggle to maintain partnerships because of cost and capacity barriers.

Actions:

- Establish a **Statewide P-TECH Partnership Support Fund** to share costs of supervision, mentorship, and student training (without using the term “incentive”).
- Develop **regional consortia** where multiple districts share college and employer partners.
- Engage state business networks (Colorado Chamber of Commerce, Colorado Workforce Development Council, Colorado Education Initiative) to create **sector partnerships** that recruit and sustain employers.
- Provide **technical assistance** for virtual mentoring and remote internship models in frontier regions.
- Publish **annual employer-impact summaries** capturing reduced onboarding costs, retention gains, and workforce readiness metrics.

Evidence of Partnership Impact:

- **Greeley-Evans 6 industry testimony:** P-TECH internships have “transformed our model from short-term experiences into long-term investments in future talent.”

- **James Irwin Power Technical:** Nine-year record of students completing AAS degrees ahead of schedule, with sustained employer collaboration.

These collaborations illustrate how P-TECH not only educates but also **builds enduring local economies.**

Table 8. *Summary Table for JBC*

Policy Question	Recommended Solution	Demonstrated Impact
How do we fund the full model?	9-to-14 cost-aligned formula	Predictable, equitable, high ROI
How do we measure success statewide?	Integrated data & outcomes system	Transparent reporting, accountability
How do we scale smartly?	Sector-aligned, performance-based growth	Quality assurance, workforce alignment
How do we sustain partnerships?	Partnership Support Fund & regional consortia	

Conclusion: A Workforce Strategy, Not Just an Education Program

The 2024 Talent Pipeline Report calls for more “systemic alignment between education and workforce development” and stresses the need for scalable models that shorten the time between learning and earning. P-TECH already fulfills this charge. It provides early exposure to college and career while keeping costs low for families and the state, generating measurable return on investment through tuition savings, degree attainment, and direct employment in priority industries.

To build on these results, Colorado must:

- Fund the full 9-to-14 model to reflect true program costs.
- Create unified data systems to measure credential and wage outcomes.
- Grow strategically in alignment with the state’s highest workforce needs.
- Deepen employer collaboration, particularly in rural regions, to strengthen the state’s talent pipeline.

P-TECH is more than a pilot—it is an evidence-based workforce solution that prepares students for the careers driving Colorado’s future economy. With focused investment and accountability, it can serve as a cornerstone of the state’s broader strategy to meet both educational equity and labor market demand.