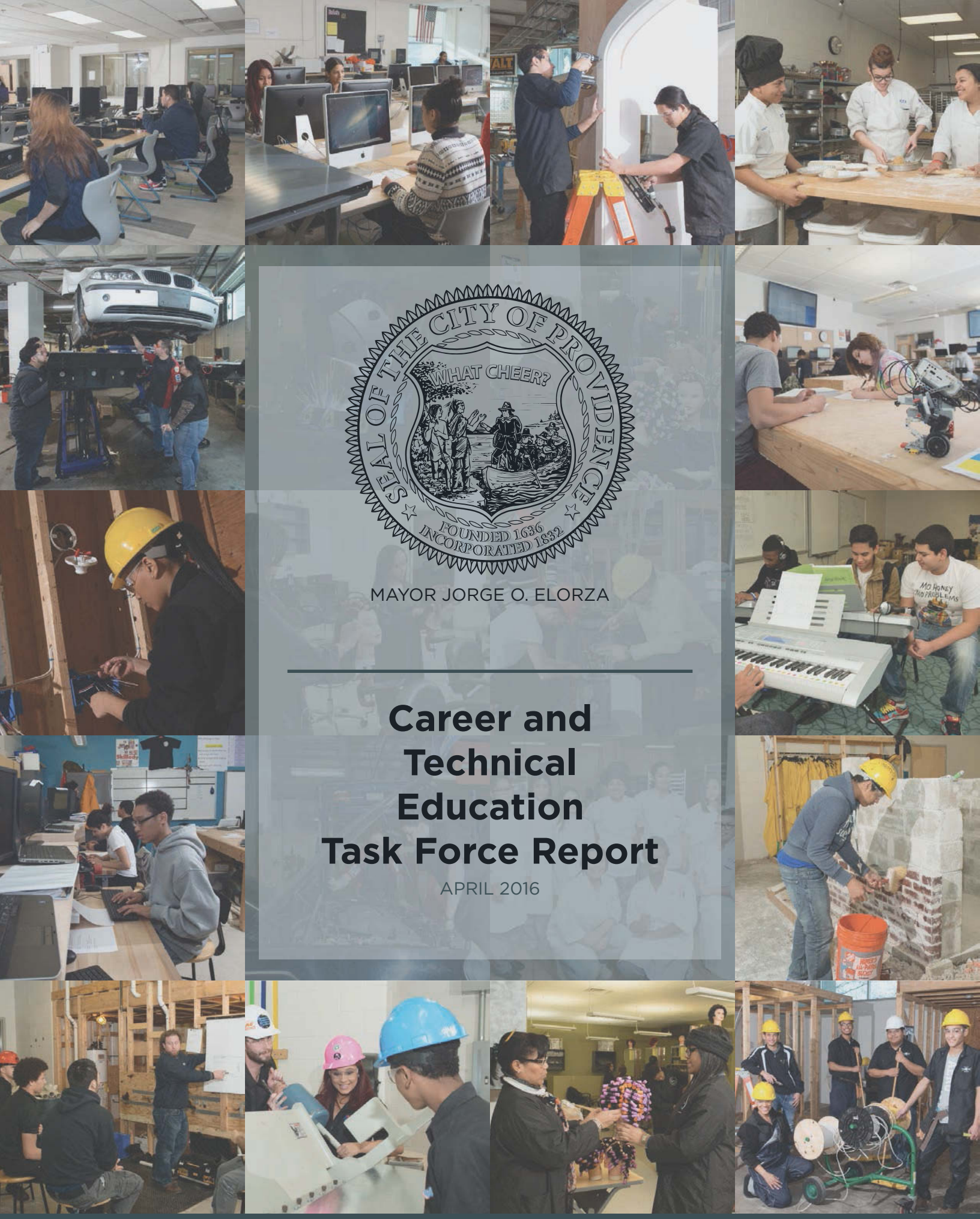

MAYOR JORGE O. ELORZA

Career and Technical Education Task Force Report

APRIL 2016

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I. Executive Summary

Mayor Jorge O. Elorza formed the Career and Technical Education (CTE) Task Force in October 2015 to build a Career and Technical Education system that ensures students and the broader community are prepared to thrive in an increasingly competitive job market.

The Opportunity: Creating a Robust Career and Technical Education System

A vision for a rigorous, robust, and cutting-edge Career and Technical Education system will ensure that the City of Providence is well prepared for the economy of the future. As post-secondary education or training becomes increasingly necessary for workers to achieve a living wage, CTE at the Providence Public School District (PPSD) must adapt by incorporating clear post-secondary pathways for students both before and after high school graduation. CTE represents a clear opportunity to provide high school students with the career awareness, skills, and pathways they need to succeed in a competitive job market and to build the talent pipeline necessary for local economic growth.

At its best, CTE provides students from a range of academic and socio-economic backgrounds the opportunity to explore and work towards concrete career goals through specialized programs. A student who sees a future for themselves in the trades can utilize CTE to get a free head start in costly apprenticeship programs; a student interested in biotechnology can graduate high school with hands-on lab experience and post-secondary certifications to enter a lab technician role; or a student at-risk of dropping out can graduate with industry credentials and tangible skills in a job they enjoy. CTE allows students of all levels to build real-world skillsets and to have a full understanding of how to attain the career and wage they want in their industry of choice.

In order to truly build a CTE system that works, PPSD must reach and motivate students at an early age, provide hands-on, rigorous, and experiential learning opportunities, and connect with local industry partners. To educate students about viable high-wage career pathways, and make these opportunities truly attainable, PPSD must engage with industry professionals to inform the direction and content of CTE programs.

Through the implementation of tested models of CTE instruction, rigorous curriculum, and industry engagement, the City can achieve greater success in the following areas:

- *Student Engagement-* Providence has an urgent need to raise graduation rates and to simultaneously increase academic expectations and student achievement in its public schools. While in 2013 PPSD graduated over 70% of students, math proficiency in comprehensive high schools as measured by the NECAP ranged from 3% - 6% and reading proficiency ranged from 39% - 73%. CTE is a powerful tool to promote student engagement through the "real-world" applicability of the course material. Years of research has demonstrated vocational education to be an effective means of lowering drop-out rates and re-engaging at-risk youth. Successful CTE programs engage students in well-defined career tracks, with stackable industry-recognized credentials earned over four years so that they can graduate ready to work or to continue onto post-secondary education.

- *College Success -* Students must be better equipped to excel at the post-secondary level with a strong academic foundation when they graduate from Providence high schools. While relatively high percentages of PPSD students pursue higher education, post-secondary degree completion for graduates remains low. While over half (58%) of students from the class of 2013 enrolled in college for the fall immediately following their graduation, and even more during the first two years after graduation, post-secondary retention rates are low. Overall, only 25% of the graduating class of 2006 and 22% of the class of 2007 completed a degree within six or more years of high school graduation.

- *Industry Talent-* In 2015, the Providence City Council commissioned Fourth Economy Consulting to conduct an economic development cluster study of Providence. Their final report demonstrates that the City struggles with lower educational attainment, higher unemployment, and lower median income in comparison to the region and the country.[1] While it points toward opportunity clusters for the City's growth, it also raises the concern and need among all clusters for a stronger talent pipeline. In growing industries, like information technology, advanced manufacturing, and life sciences research, the City lacks the optimal numbers of graduates to fill jobs and attract local investment. According to the National Skills Coalition, in Rhode Island there is a deficit of individuals trained to the middle-skill level, which requires education beyond high-school but less than a four-year bachelor's degree. Though the message in our schools often gears individuals toward attaining a Bachelor's Degree, almost a third of new job openings nationally between 2010 and 2020 will require individuals trained to the middle-skill level. In Rhode Island, middle-skill positions make up 54 percent of available work opportunities, but only 42 percent of the state's workforce is trained at the middle-skill level.[2] This gap leaves key industries unable to find enough sufficiently trained workers and prevents the local economy and employers from growing.

The Plan: CTE Task Force Recommendations

A strong and well-aligned CTE system will be mutually beneficial to both economic growth and student achievement. In order to build opportunities for students and local industry, the efforts of workforce development, economic development, and education must work hand-in-hand.

The CTE Task Force was formed as a subcommittee of the Providence/Cranston Workforce Development Board to forge these connections. Co-chaired by Joseph DiPina, Chief of Administration at PPSD and Mark Huang, the City's Director of Economic Development, the Task Force includes 27 additional members including industry leaders, representatives from higher education, and state and local administrators in education and workforce development.

The CTE Task Force was charged with providing recommendations to the Mayor and Interim PPSD Superintendent Christopher Maher to evaluate and align CTE programming with local industry to better serve PPSD students and the broader community. The topics and actions were to examine current CTE offerings at PPSD, to adapt best practices and models from across the country, to embed career awareness across middle school curricula, to align with the efforts of workforce development boards, and to analyze the most appropriate industry sectors of focus for CTE based on available job opportunities in Rhode Island.

The CTE Task Force met through February 2016 to formulate the following recommendations for the evaluation and improvement of CTE.

Refine the vision, model, and integration with workforce development

1. **Create an implementation team with leadership from PPSD, the Department of Economic Development, and Workforce Solutions of Providence/Cranston.** Key representatives from PPSD, the Department of Economic Development, and Workforce Solutions will serve as an implementation team for these recommendations, with guidance from the Mayor and Superintendent.

2. **Institutionalize rigorous criteria to evaluate and align CTE programs.** In order to make decisions for future programming and ensure that all programming aligns to District standards, the Task Force recommends a clear set of criteria to evaluate CTE programs (outlined on page 34).

3. **Sustain and expand support of the wider community through after-hours programming in CTE facilities.** The District should fulfill its role as a community leader by giving its students, parents, and the greater community an opportunity to benefit from its CTE facilities in a "Second Technical Day" after school hours. By opening the PCTA to after-hours programming, PPSD can support workforce development in Providence, and engage disconnected youth, families of PPSD students, and the broader community.

4. **Develop career awareness among middle school students for CTE program outreach.** Promote career awareness at an earlier age and educate middle school students about CTE programs available at PPSD.

Fully engage industry partners into CTE implementation

5. **Create a district-wide Advisory Board of industry professionals and community partners to advise CTE programming across PPSD.** The implementation team will form a district-wide Advisory Board to engage employers and make recommendations for the direction and content of CTE programs at PPSD. The district-wide board should inform strategic decision-making about programs, fundraising, and how to build career awareness and pathways into the curriculum for students K-12.

6. **Engage local employers to develop opportunities for student internships.** The District must develop clear protocols for student internships, including benchmark grades and performance for an internship placement, and memoranda of understanding with employers to clarify their role as hosts to students. The District must engage local employers and cater internship programs to their specific employment needs and initiatives, and build accountability and expectations for students through embedded workplace readiness training in all CTE programs.

7. **Strengthen linkage with registered apprenticeship programs.** CTE programs of study should be explicitly linked to applicable opportunities in registered apprenticeship programs when available.

Ensure CTE curriculum is rigorous and relevant

8. **Prioritize opportunities for concurrent or dual enrollment with higher education.** In order to give students a pathway toward earning a post-secondary certification or degree, PPSD must ensure that there are clear opportunities to earn relevant post-secondary credits while enrolled in CTE programs.

9. **Develop and implement a holistic rubric for 21st Century Skills to be embedded across curricula for the entire district.** The district should adopt a 21st Century Skills framework that includes the workplace readiness and social-emotional skills necessary for employment. PPSD should design a 21st Century Skills rubric for the entire district, while also gaining clarity for skills that should be elevated specifically for CTE programs to enhance student workplace readiness.

10. **Promote greater integration of academic core instruction into CTE strands.** Teaching staff should be trained in contextualized academic learning, for instance the Math-in-CTE model, in CTE programs. The Task Force recommends next steps (fully outlined on page 37) for the District to properly support teachers to integrate core academics into CTE instruction.

11. **Strengthen holistic support systems for students in CTE programs.** To ensure that students are properly supported during a career program, guidance counselors and CTE coordinators must be well versed in career pathways and opportunities for students outside of school and after graduation. Additionally, guidance counselors should assist students to take advantage of opportunities like dual enrollment in college coursework, advanced courses, work-based experiences, expanded learning opportunities (ELOs) and career-related after school and summer programs.

Report Overview

The following report offers background on CTE policy, best practices in CTE programs, and labor market information to contextualize these recommendations. It then describes the local context of CTE including: an overview of CTE at PPSD and the PCTA, statewide CTE initiatives, workforce development programs and partnerships, and apprenticeship opportunities. The report concludes with a detailed overview of the aforementioned recommendations in order to best bridge resources and improve the CTE system overall.

II. Background on Career and Technical Education Policy

Vocational education has been implemented in the United States for almost 100 years since the country's transition from an agricultural to a manufacturing economy.[3] Since 1917, there has been federal legislation to regulate, support, and fund local vocational education. In 1984, the Carl D. Perkins Vocational Education Act was passed and has since been the primary source of federal funding for states to support local CTE programming. In 2006, it was reauthorized as The Carl D. Perkins Career and Technical Education Act to emphasize the importance of academic achievement beyond solely vocational training. This most recent iteration, Perkins IV, includes an increased focus on curricular integration of academics into CTE curricula, stronger connections between secondary and post-secondary education, and state/local accountability to quality programming.

The Rhode Island Department of Education (RIDE) has responded to federal changes to ensure that CTE programs across the state meet federal expectations for programming. In 2012, the Rhode Island Board of Regents for Elementary and Secondary Education approved and adopted Regulations Governing Career and Technical Education in Rhode Island. These regulations created a system of statewide RIDE-approval for all career preparation programs across the state. They also require local education agencies to provide all high school students in Rhode Island the opportunity to enroll in a RIDE-approved career preparation program.

The RIDE approval process is ongoing and programs are evaluated through applications, observation periods, and interviews with teachers and students. At PPSD, CTE programs continue to move through this approval process. Currently, 17 out of 30 programs at PPSD are RIDE-approved.

III. Career and Technical Education Best Practices

Strong CTE programs are shown to function as a means to keep students in school, motivate them to complete rigorous coursework, and provide them with skills to thrive in a difficult job market.[4] The relevance and real-world applicability of CTE coursework is a powerful tool for student engagement and drop-out prevention.

Research suggests that students who attend quality CTE programs are less likely than general education students to fail classes, be absent, or drop out of high school. [5] In New York City, students enrolled in 21 CTE high schools across the five boroughs graduate at higher rates and are four times less likely to drop out than general education high school students.[6] Furthermore, a longitudinal study of over 6,500 students in three large urban districts across the country indicates that taking more CTE credits can boost GPA, the probability of graduation, and achievement measures for high-risk students, at little to no cost to overall academic achievement. [7]

To achieve these successes, it is important to review best practices for CTE programs. In a 2014 Evaluation Report of Career and Technical Education in Providence, Dr. Susan Gracia provides a comprehensive literature review of best practices in CTE, pointing toward 14 critical features of high quality programs that produce positive academic and non-academic outcomes for students. [8] They are:

1. Academic rigor
2. Programs of study
3. Pathways to postsecondary education and careers
4. Transition from middle school
5. Curriculum integration
6. Connections with employers
7. Professional development
8. Personalization
9. Guidance and counseling
10. Extra support for students
11. Attention to the labor market
12. Gender equity
13. School leadership, and;
14. Accountability for student learning

These features are explained in full detail in Dr. Gracia's evaluation. Recent research also provides evidence in favor of particularly effective models of CTE. The Career Academy is one such model, consisting of a school-within-a-school four-year cohort around a specific career theme.[9] Findings suggest that career academies help high-risk students improve their performance in high school by doubling their completion rate of the core academic curriculum. One study found that eight years after graduation, career academy graduates earn an average wage of 11-percent more than non-academy students.[10] Career academy students have also been found to have higher college-going rates than students not enrolled in career academies. [11]

The Program of Study, or POS, model is included in the federal Perkins Act. Schools that receive Perkins IV funding to support CTE programs are required to provide at least one program of study for their students. In the 2012 RIDE Regulations, programs of study are defined "to offer not fewer than three, connected, rigorous non-duplicative career and technical education courses; deliver a curriculum aligned to both state academic and industry standards; provide instruction by appropriately certified and highly trained instructors; and provide industry-recognized credentials whenever applicable to the program, and/or postsecondary credits, and/or advanced standing in postsecondary education and training programs." In preliminary findings in 2012, researchers found that by the end of 10th grade, students in programs of study tended to have higher test scores, academic grade point averages, and progress to graduation than control students.[12]

Recent research also points toward the importance of academic curriculum integration into CTE programs. Frameworks like Math-in-CTE, Authentic Literacy-in-CTE, and Science-in-CTE integrate relevant academic content into technical skills lessons. According to one study, students in Math-in-CTE classrooms performed significantly better on two of three standardized measures of math achievement, without reducing students' occupational knowledge and skills, in comparison to regular CTE classrooms. [13]

Employability skills are also essential in CTE curricula and guidance in order to ensure that students are prepared for success after graduation. Workplace skills like social-emotional learning, stress management, and personal accountability prepare students for the realities of the workplace. “21st Century Skills” are a well-researched framework that can be implemented to help meet these goals in CTE and broader education.

Spotlight on 21st Century Skills

21st Century Skills constitute a framework for preparing students for success in the digital age, as a backbone for all teaching and learning. The following skills, defined by the Partnership for 21st Century Learning, are important objectives in all technical and academic coursework, and can particularly support CTE students in developing their employability.

Learning and Innovation Skills	Life and Career Skills	Information, Media and Technology Skills
Critical Thinking	Flexibility and Adaptability	Information Literacy
Creative Thinking	Initiative and Self-Direction	Media Literacy
Collaborating	Social and Cross-Cultural Skills	ICT (Information,
Communicating	Productivity and	Communication, and
	Accountability	Technology) Literacy
	Leadership and Responsibility	

Source: Partnership for 21st Century Learning (2016) Framework for 21st Century Learning.

IV. Labor Market Overview

In examining both Rhode Island and national labor market trends, it is clear that there are fewer opportunities for individuals with solely a high school degree than there once were. Unlike vocational training of the past, it is essential that CTE programs include pathways into post-secondary programs and apprenticeships in order to adequately prepare students for the workplace.

According to the Pathways to Prosperity Project at Harvard University, in 21st century America, education beyond high school is crucial for individuals to achieve work and economic stability. Over the past 40 years, the number of jobs in the U.S. that require at least some college education has increased while opportunities for those with just a high school degree have shrunk dramatically.[14] As the Georgetown Center estimates, while in 1973, workers with postsecondary education held only 28 percent of jobs, they held 59 percent of jobs in 2010 and are projected to hold 65 percent of jobs in 2020.[15]

Average salaries reflect an advantage for those with at least some college education. In 2008, median earnings of workers with a Bachelor's Degree were 65 percent higher than those of high school graduates ($55,700 vs. $33,800). Similarly, workers with an Associate's Degree earned 73 percent more than those who had not completed high school ($42,000 vs. $24,300).[16]

According to the National Skills Coalition, middle-skill jobs, which require education beyond high school but less than a four-year degree, make up the majority of the United States' labor market. The Georgetown Center projects that nearly half of jobs requiring workers with post-secondary education will be middle-skill occupations that go to people with Associate's Degrees or occupational certificates. Furthermore, 27% of people with post-secondary licenses or certificates actually earn more than the average Bachelor's Degree recipient. [17]

According to the National Skills Coalition, in 2012 in Rhode Island, middle-skill jobs made up 52 percent of available work opportunities, but only 42 percent of the state's workforce was trained at the middle-skill level. This gap leaves key industries unable to find enough sufficiently trained workers and prevents the local economy and employers from growing. [18]

To understand the labor demand in Rhode Island and nationally, it is useful to look at industry and occupational projections from the U.S. Bureau of Labor Statistics and the Rhode Island Department of Labor and Training (DLT). A comprehensive overview of industry and occupational projections from the Rhode Island DLT entitled "2022 Occupational Outlook" points toward high employment needs in fields such as construction and healthcare/social assistance. [19]

The U.S. Bureau of Labor Statistics also provides national and regional labor market projections. Nationally, in their 2014-2024 Employment Projections report, the healthcare and social assistance sector is projected to become the largest employing major sector over the decade, with the largest growth of any industry across the country. [20] Healthcare support occupations and healthcare practitioners/technical occupations are projected to be the two fastest growing occupational groups, representing about one in four new jobs in the United States. 11 of the 15 fastest growing occupations nationwide will require some level of post-secondary education.

The U.S. Bureau of Labor Statistics' 2014 report on Occupational Employment and Wages in the Providence-Fall River-Warwick Metropolitan Statistical Area [21] shows that local employment in healthcare in the Providence-Fall River-Warwick region is above the national average, alongside the fields of community and social services, education, and food industries.

Wage information is also important to consider alongside labor market projections. In a 2014 report, the Economic Progress Institute estimates the cost of living in Rhode Island for families and individuals, accounting for basic living expenses, such as housing, food, health care, child care, transportation, and other miscellaneous items. [22] The following chart includes the total annual expenses, and pre-tax wage required, for families and single adults to meet basic needs.

Meeting Basic Needs in Rhode Island [23]

	Single Parent Family*	Two-Parent Family*	Single Adult
Annual Expenses	$51,492	$56,088	$19,956
Annual Pre-Tax Wage Required	$59,083	$64,234	$24,666

*Assumes two children: a toddler and a school-aged child.

This estimation does not comprehensively cover all types of support structures and family formations that could impact annual expenses and incomes. However, it allows for a basic analysis of benchmarks for stable and living wages in Rhode Island. The Rhode Island DLT's Top 10 Occupations per Degree Level and Training list includes hourly and annual wage information for each job that is projected to have the largest openings in 2022 in Rhode Island.[24] PPSD should utilize this information in order to prepare its students for career pathways that offer a living wage and the potential for wage progression.

V. Local Context of CTE and Workforce Development

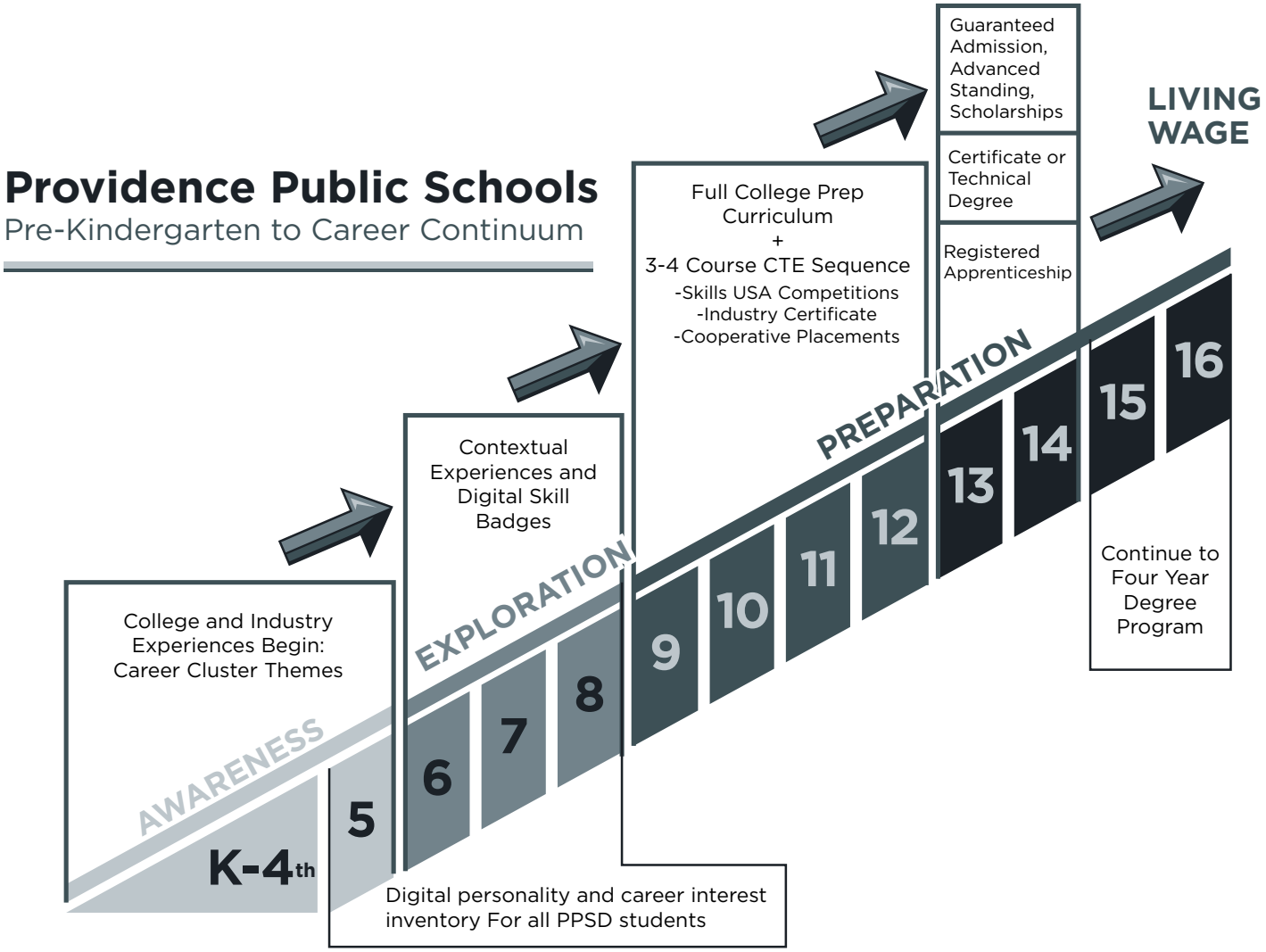
There are significant opportunities to enhance the CTE system at PPSD. This section discusses past strategies for improvement at PPSD, as well as the landscape of opportunities that PPSD can continue to engage with to promote student success. Partnerships with the Rhode Island Department of Education (RIDE), state and local workforce development boards, and Rhode Island apprenticeship entities can help to align the CTE system with local industry needs and to improve student outcomes.

The CTE System at the Providence Public School District

PPSD, with a broad base of 30 diverse CTE programs across its high schools and the founding of the Providence Career and Technical Academy (PCTA) in 2009, has invested substantially in prioritizing CTE as a key strategy to engage high school students and prepare them for college and the workforce. Over the past six years, the number of CTE programs across the District has increased threefold as part of this mission. However, without clear guidelines in place in the development of these programs, there has been uneven quality across the system. As the District strives to amend this challenge and to improve the rigor of all programs, there is a critical need for evaluation to ensure all programs promote strong outcomes. Furthermore, there is a need to enhance career awareness among all students, not just CTE students, and to reach students at a younger age.

CTE Philosophy: Pre-Kindergarten to Career Continuum

Over the past several years, PPSD has adopted a Pre-Kindergarten to Career Continuum to guide the district's goal of embedding career awareness across students of all ages. The continuum map, shown below, moves from "awareness" from Pre-K to 5th Grade, to "exploration" in middle school, to "preparation" in high school, and finally, to a living wage or post-secondary education or training.



At the time this map was developed, PPSD's Office of CTE provided the Providence After School Alliance (PASA) with funding to better integrate career exploration into their afterschool programs for middle school students. Funding was used to offer special trainings to PASA's program providers on how to better integrate career connections into their activities. Youth went on career-related field trips and a series of "CTE Days" made it possible for District staff to deepen career awareness among 7th and 8th graders, and inform them of the CTE programs available to them. [25] Currently, there are no formal programs in place that link middle school students to career exploration and CTE programming, or elementary students to career awareness.

The career continuum emphasizes high school as a time for preparation, but it is important to recognize that the majority of PPSD students who are not enrolled in a CTE program are also in need of career exploration opportunities. When looking at this continuum, it is important to consider a spectrum of career preparedness between students in CTE and traditional high school programs to ensure that there are experiential opportunities for all students to explore career interests. Furthermore, career readiness and college readiness require similar skills which all students should similarly be prepared for throughout their K-12 experience.

High School CTE Programs and Evaluation

In the 2015-16 schoolyear, 1,073 high school students were enrolled in a formal CTE program at PPSD. Before entering high school, middle school students who are interested in CTE apply to participate in a specific four-year CTE program at the start of 8th grade. At the PCTA, the number of applicants generally exceeds the number of slots available, which are about 200 students per entering class.

There has been significant growth in CTE programs offered at PPSD over time – from 10 in 2009, to 17 in 2012, to 30 programs in 2015, though some of these programs are in planning years and may not ultimately be approved. In 2015, PPSD's CTE programs were hosted across five public schools – the Providence Career and Technical Academy (11 programs), Central High School (3 programs), Mt. Pleasant High School (5 programs), Hope High School (5 programs), and Juanita Sanchez High School (2 programs) – and two charter schools – Academy of Career Explorations (3 programs) and Trinity Academy for Performing Arts (1 program). A list of the programs offered at each school is included in Appendix A. The majority of these programs include stackable credentials and 13 include articulation agreements with colleges and universities for specific coursework in their field.

In accordance with RIDE's 2012 Regulations Governing CTE in RI, PPSD's CTE programs have each begun to apply individually to become approved career programs of study. Currently, 17 out of 30 of the CTE programs at PPSD are approved. Additionally, each CTE program is required by RIDE to have a Program Advisory Committee (PAC) of industry leaders, parents, students, and other advisors which meet approximately four times per year to advise on the program design, management, and implementation.

Spotlight on Massachusetts Vocational Technical Education Framework

Though PPSD has a CTE program approval process through RIDE, there are no standardized curricular guidelines in Rhode Island for CTE programs of study. Each local education agency is free to design programs that meet Perkins IV funding standards and the RIDE-approval standards.

Unlike Rhode Island, in Massachusetts, the Department of Education has a curricular framework for all CTE programs in order to ensure quality and consistency of instruction across schools. Massachusetts' General Law (M.G.L.) Chapter 74 defines the Vocational Technical Education Framework to include the following six strands for all CTE curricula:

Strand 1: Safety and Health Knowledge and Skills
Strand 2: Technical Knowledge and Skills
Strand 3: Embedded Academic Knowledge and Skills
Strand 4: Employability and Career Readiness Knowledge and Skills
Strand 5: Management and Entrepreneurship Knowledge and Skills
Strand 6: Technological Knowledge and Skills

Strands 1, 4, 5, and 6 are standardized for all programs, giving students a common basis across all CTE programs in safety, employability, entrepreneurship, and technology. Strand 2 and 3 are specified for each career program with the necessary technical skills and specific points of alignment with Academic Curriculum Frameworks to embed into CTE training.

At PPSD, the CTE curriculum focuses primarily on the industry and technical skills required for certifications. Without a standardized framework, the best practices of embedded academics, employability skills, entrepreneurship, and general technological literacy may be secondary to technical standards.

RIDE requires annual reports of outcomes for each program. The five measures include industry-recognized credentials earned, post-secondary credits earned, advanced standing in a registered apprenticeship earned, program completion, and postsecondary enrollment. Appendix B includes a summary of outcomes for the first four of these metrics in CTE programs across the District in 2013-14.

The District additionally collects data to capture the number of students enrolled in post-secondary education after graduation within 12 months, but this metric does not require specification about whether the student ultimately graduated or acquired a certification or degree. There is no additional specific tracking of CTE students after graduation to gauge whether they were able to attain employment or continue onto post-secondary, and whether or not these were opportunities within their CTE field. This makes it difficult for PPSD to evaluate their investments in each CTE program.

Over the years, PPSD has looked to specialists to evaluate and engage the District in strategic planning processes to improve its CTE system. Since 2007, Dr. Susan Gracia has conducted three comprehensive evaluations of Career and Technical Education in Providence to evaluate the District's use of Perkins funds. In the first program evaluation of the 2007-2008 school year, Dr. Gracia compared PPSD CTE offerings to the 14 key best practices that she identified from her literature review. At that time, the overwhelming majority were unmet, with the exception of personalization to students needs and interests.

After the first 2007-2008 Evaluation, PPSD engaged in a strategic planning process for CTE. Drawing upon best practices from Massachusetts CTE programs, labor market information, educational research, and input from community stakeholders, a team from PPSD crafted a CTE Strategic Plan which included a CTE Mission, Vision and Core Values, and Three-Year Goals including:

1. Build and sustain meaningful relationships to expand and strengthen partnerships between PPSD CTE and all stakeholders;

2. Enhance awareness, communicate vision and promote value of CTE throughout PPSD and the Providence community;

3. Utilize rigorous, research-based curriculum for every articulated CTE course of study; Develop a systemic alignment plan between CTE and GSEs/GLEs, national standards and/or industry/post-secondary credentials;

4. Create RIDE-certified CTE programs of study aligned to both regional and national growth-industry projections;

5. Collaborate to ensure an effective process of student recruitment and placement into appropriate CTE programs and pathways; and

6. Increase and maintain adequate funding for CTE across the district [26]

After the second program evaluation in 2011, PPSD administrators again reconvened to create another iteration of this strategic plan. The new updated version was organized into a Five Year Plan, beginning in academic year 2012-13. The five-year plan works toward meeting the following four Strategic Goals:

A. Develop a new paradigm for career technical education (CTE) in Providence.

B. Enlist all members of the school and greater Providence community as CTE stakeholders.

C. Support CTE through the development of new resources.

D. Invigorate CTE through highly focused program development [27]

A common thread across all CTE evaluations and strategic plans in the District stresses the challenge of ensuring that students entering the programs are truly motivated to be there and aware of career pathways before entry into the program. As one Strategic Plan Update in 2012 writes: “Access to these programs in terms of equity and proper placement based on student interest needs to be reviewed and improved, with the ultimate goal that a more refined and appropriate application and placement process will result in optimal program participation by students who choose to enroll in them.” [28]

There has since been an application process instated for all CTE programs to ensure that students are motivated to pursue their specific career path before entrance into the program. The application process includes an essay regarding one's interest in and exposure to the career pathway, a guidance counselor's recommendation, academic grades from 7th Grade, and attendance records. Each of these categories is assigned a numerical point value to add up to the highest possible application score of 100. To be accepted to the program, the student must have an application score greater than 65. If a program is over-enrolled, there is a lottery for qualifying students.

High School CTE Programs and Evaluation

The Providence Career and Technical Academy (PCTA) opened for its first year in September 2009, with state-of-the-art facilities to offer the following seven career pathways: carpentry, electrical sciences, HVAC, automotive, culinary, graphic design, and cosmetology. With new facilities, the school was immediately attractive to students and drew large numbers in the lottery.

At the request of PPSD, Building Futures, the state's industry partnership for construction, applied and received a Nellie Mae Education Foundation grant to design and support industry alignment at the PCTA in the carpentry program with the expectation that this would later be expanded to each CTE strand. In 2010, Building Futures received an additional Nellie Mae grant to implement and populate Program Advisory Committees (PAC) for each of the strands offered at the PCTA and form an overall General Advisory Committee (GAC) for the school. The GAC worked until 2011 to:

- Populate and oversee PACs to work with school administrators to apply for the proper industry certifications, set up work-based experiences for students, ensure curricular alignment to industry standards, and seek funding and donations to keep programs up-to-date
- Facilitate professional development to provide ongoing support to teaching staff
- Guide a mini-grant project on academic curriculum integration in CTE programming [29]

Upon finishing their work in 2011-12, the PCTA General Advisory Committee offered the following recommendations to improve the PCTA and put it on a path toward success.

1. Develop a PCTA Strategic Plan
2. Integrate academic and technical curricula
3. Address school-wide scheduling to support CTE
4. Ensure relevancy of CTE programs in providing viable career paths
5. Develop formal articulation to post-secondary training and education
6. Improve student recruitment and enrollment procedures
7. Deepen Advisory Committee involvement in CTE programs

Progress has been made in different degrees for each recommendation. Many of them must be revisited and evaluated in the current context at the PCTA. Some, such as school-wide scheduling, have been addressed. The PCTA currently runs on a "week about schedule" in Grades 11 and 12 which students alternate between a week in academics and week in technical lab, allowing flexibility for student work-place experiences and a greater number of training hours in the facilities. Other recommendations are still relevant to improving CTE in the district and are incorporated into the recommendations of the CTE Task Force.

Since 2012, all strands at the PCTA have become RIDE-approved programs of study and the programs of Pastry Arts, Plumbing Technology, Construction Craft Labor, Pre-engineering and Construction Technology have also been added and approved.

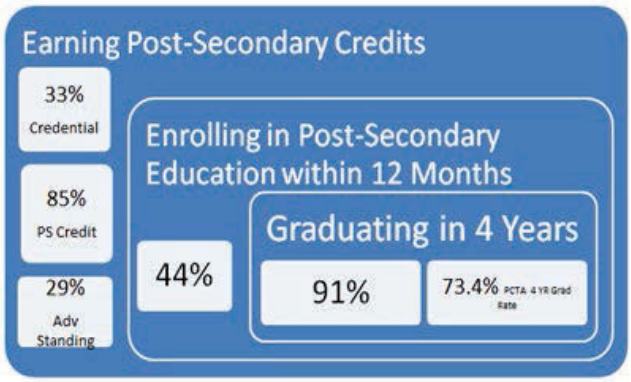
On the following page, the PCTA's outcome metrics provide an annual performance summary for the school in 2013-2014. As the performance measures show, the graduation rate of the PCTA is significantly higher for concentrators, those who choose to pursue their career track in grades 10-12, than the total number of students who entered the school in 9th grade. In their first year, students take an exploratory course in their chosen program of study before entering the sequence of skills-based coursework in grades 10 through 12 as "concentrators." The highest transfer and drop-out rate is after this first exploratory year. Now that there is an application policy in place, the PCTA staff hopes to see higher student motivation and less drop-out after the first year.

PCTA Performance Summary 2013-14

Percent of completers earning:
Credential(s): 33 %
Post-secondary credit(s): 85%
Advanced standing in a registered apprenticeship: 29%

Post-grad enroll in Post-Secondary: 44%

4 Year Graduation Rate:
Concentrators (10th - 12th): 91 %
Total (including 9th grade): 73.4%



Dr. Gracia's 2013-14 Evaluation of CTE cites pertinent areas that are still in need of improvement at the PCTA based on surveys and conversations with teachers, administrators, and the central office staff. These areas of improvement include:

- More curriculum integration, common planning time between academic and CTE teachers, and professional development opportunities; [30] and
- Clear guidance structures and an exit policy for students who are not passing the programs. [31]

Opportunities Industrialization Center (OIC) of Rhode Island at the PCTA

Since 2013, the PCTA has also hosted the OIC of Rhode Island to provide adult CTE programming in after-hours training programs. Technical and education programs offered by the OIC include weatherization, pre-apprenticeship construction training, automotive, HVAC, occupational safety and health administration (OSHA) 10 training, welding, and English as a Second Language. The OIC continues to offer training after-hours at the PCTA and has put increased emphasis on engaging the parents of PCTA students to benefit from these opportunities. Recently, the PCTA has been included on a Real Jobs Rhode Island grant lead by the OIC to be part of their "Hire Path" Program to provide targeted training to adults in the marine trades and manufacturing.

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

In fall 2016, PPSD, in partnership with Commerce RI, is launching an innovative CTE program called P-TECH that gives a cohort of students the opportunity to graduate high school with an Associate's Degree. The program will focus on bioscience and information technology and will launch with a cohort of 50 incoming freshman at the PCTA. Tech Collective will serve as the industry partner for the program and The Community College of Rhode Island as the university partner.

P-TECH is a successful model that began in New York City in 2011 as a partnership between the public school district, IBM, and the City University of New York and New York City College of Technology. Across the country, there are currently 35 P-TECH programs with more than 100 industry partners. The model requires a three-piece partnership between a school, industry leader/employer, and local community college to offer high school students an opportunity to attain a specialized Associate's Degree when they graduate high school. Depending on the student's speed and ability, the P-TECH program is personalized as a four, five, or six-year opportunity for each student as they move through high school and college coursework. Ultimately, the goal of the program is that all students graduate in six years or less with a high school degree and an Associate's Degree in a high-growth high-wage sector.

The industry partner plays the role of providing students with one-on-one mentoring, workplace visits and skills instruction, paid summer internships, and first consideration for job openings. They also shape the development of the Associate's Degree, alongside the college or university partner, by providing information about key skills and jobs in demand in their field. The college partner either designs a new Associate's Degree for the P-TECH program or shapes a pre-existing one to meet the needs of the students. Students are dually enrolled in high school and college starting their first day of the program.

The FY16 state budget included Governor Raimondo's proposal of $900,000 to launch three P-TECH schools in Rhode Island. Since approval, three programs have been confirmed to launch in Providence, Newport and Westerly in fall 2016. Each district will be awarded $200,000 in funding through Commerce RI to support the program in its first year, paying for a director at each school and start-up costs.

Rhode Island Department of Education Initiatives

The Rhode Island Department of Education (RIDE) has launched several initiatives in recent years to better connect high schools across the state to post-secondary and advanced coursework and to improve career and technical education. The following initiatives – Prepare RI, the Advanced Coursework Network, and the CTE Board of Trustees and the CTE Trust – offer opportunities for PPSD to improve its CTE programs.

Prepare RI

At PPSD, 396 students are currently receiving college credits through dual enrollment in the 2015-16 school year. PPSD offers dual enrollment opportunities for its high school students in partnership with the University of Rhode Island (URI), Rhode Island College (RIC), and Roger Williams University.

Since 2013, Prepare RI has been the statewide policy for dual and concurrent enrollment coursework, through which high school students can earn college credit and high school credit for successfully completing a college-level course. Dual/concurrent enrollment differs from articulation agreements in that it provides immediate transcript credit upon course completion, rather than a retroactive assignment of credits when the student matriculates at a specific post-secondary institution.

In 2015, the RI Board of Education adopted new Prepare RI regulations to create a clearer process for high schools to expand dual enrollment opportunities and to establish clear eligibility criteria to determine if students are prepared to take college level coursework. Through the support of the Governor and the General Assembly, $1.4 million was dedicated to ensure that all qualified Rhode Island students could access the entire course catalog offered by URI, RIC, and Community College of Rhode Island (CCRI) through dual and concurrent enrollment at no cost to the student or district, paid for by Governor Raimondo's Prepare RI Dual Enrollment Fund. The cost of books is borne by the district, but transportation is the responsibility of the student and family.

Students can access college courses in two ways through the Prepare RI program; either by attending a college course on a college campus as a non-matriculated student, or at the high school itself, in a college-level course taught by a high school teacher who is approved by the college or university providing credits. Upon successful completion of the course, the student earns credit at both their high school and the college.

Under the new regulations, all PPSD students will be able to access dual enrollment opportunities and formulate a plan with the assistance of their guidance counselors, who are trained in the new eligibility requirements and college courses available.

The Advanced Coursework Network

Beginning in fall 2016, Rhode Island public secondary schools will have the opportunity to expand the advanced level coursework available to their high school and middle school students through a new RIDE initiative called the Advanced Coursework Network.

In an effort to close the opportunity gap, the Advanced Coursework Network will allow students from across Rhode Island to have access to challenging courses previously unavailable in their school or district. Districts and schools will have the option of joining the network as providers to extend existing or new courses to students from other districts and/or as members to allow their students to enroll in coursework offered across the network. Community-based organizations and higher education institutions can also apply to be providers.

The State will assume the costs of this program, with the exception of transportation, which parents will be responsible for. RIDE has set aside approximately $900,000 to introduce the program in 2016. Some courses will be available online, some will be taught face-to-face and others will be a mix of both models. Students will earn credit for these classes. Depending on the course, students can earn regular credits, credits toward high school graduation, or college credits.

As of January 2016, PPSD is planning to apply to participate as both member of the network and a provider of Advanced Placement Program® (AP) courses. In addition to PPSD, the Providence After School Alliance submitted an application to the Advanced Course Network for ten Expanded Learning Opportunities (ELOs) in STEM-related fields such as advanced manufacturing, engineering, design, and computer science.

CTE Board of Trustees and the CTE Trust

In 2014, the General Assembly created Rhode Island Board of Trustees on CTE and the CTE Trust to establish a coordinated CTE system across the state.

In February 2015, Governor Gina Raimondo named 15 members to the Board of Trustees to advise the Commissioner and the Board of Education (BOE) on the development of a bi-annual plan for CTE, distribution of funding for CTE, and the evaluation of CTE programs. It is also tasked with developing initiatives to modernize CTE programming, establishing and expanding initiatives to enhance collaboration between CTE programs and the private sector, and reporting annually to the BOE on the status of CTE and their recommendations. Since founding, the Board of Trustees has split into three subcommittees – Health Careers, Construction, and Manufacturing – to hone in on growing industries for the Rhode Island workforce. Each subcommittee is populated with industry leaders and employers, and representatives from the Department of Labor and Training, the RI Commerce Corporation, and higher education institutions. The subcommittees are working to create new standards for programs of studies within each field.

The CTE Trust is an independent 501(c)3 with nine members appointed by the Governor. The members are tasked with creating partnerships with employers to provide CTE students with internships, apprenticeships, and other partnerships for learning; and providing advisory assistance to the Board of Trustees in the development of new or expanding CTE programs. The CTE Trust will play a role in fundraising for CTE programs that are part of the statewide system.

PPSD leadership should engage with the CTE Board and Trust to discuss opportunities for alignment and partnership moving forward.

Workforce Development Initiatives

The Governor's Workforce Board and Workforce Solutions of Providence/Cranston lead workforce development initiatives in Providence to support workforce training and the development of pipelines for local industry. There is an opportunity for increased collaboration between PPSD and workforce development boards to expand PPSD's CTE resources to adults and disconnected youth, to ensure that youth workforce development initiatives support CTE students in the District, and to better connect CTE offerings to local industry demand.

Youth Workforce Development

The state and local workforce development boards offer youth programs to help prepare young Rhode Islanders with the training and skills they need to enter the workforce. The Workforce Solutions Board of Providence/Cranston receives state and federal funding to prepare young adults, ages 14 to 24, with education, work experience, and occupational skills training.

Workforce Solutions operates two youth workforce centers as part of a statewide system of fourteen youth centers to provide direct services to in-school or out-of-school youth. The Providence Youth Center is operated by Goodwill Industries of RI, and the Cranston Youth Center and Providence Skills Center is operated by Comprehensive Community Action Program (CCAP). At these centers, staff members work closely with youth to assess their needs and offer a variety of services including: vocational interest inventories, academic services such as remediation, pre-GED, GED classes, job skills training, résumé writing, assistance with employment applications, mock interviews, financial literacy, summer jobs programs, and referrals to additional services. In the past, there was a youth center located at the PCTA, through which all students were enrolled in free programming. The center was moved due to space limitations.

All youth who walk into a youth center can automatically enroll for services, but only those who meet specific low income and high-risk requirements are enrolled in a limited-capacity two-year WIOA program. In 2015, the youth centers and stand-alone posts received federal funds to enroll approximately 160 youth, many out-of-school, in this program for two years of job development services and a paid summer employment opportunity.

Every year Workforce Solutions also operates a Summer Youth Work Experience program through which nearly 300 youth receive work readiness training and are placed in a job experience at a local organization. Funding for this program is provided through the Governor's Workforce Board Job Development Fund and in the past, also through Temporary Assistance for Needy Families (TANF) funds from the Department of Human Services. Youth apply for the program first-come first-serve through the youth centers. The majority of positions are open to both in-school and out-of-school youth.

Workforce Solutions holds a competitive RFP process for local organizations each year to host and train youth employees at no cost to their organization. In 2015, nine organizations received funding to host a total of 278 youth for up to 120 paid hours of work and at least 20 hours of workforce readiness training. The majority of youth employees, 57%, were aged 16-18. Nearly all youth received certifications for completing workforce readiness and work experience components of the program. Additionally, 60% of participants received an industry-recognized credential through their experience.

Workforce Development Culinary Training Pilot at the PCTA

The Governor's Workforce Board and Workforce Solutions Board of Providence/ Cranston are partnering to pilot the use of the PCTA facilities for afterhours programming in 2016. The pilot project will focus on bringing disconnected youth who have either dropped out, are chronically absent, or underemployed graduates, into the PCTA for job training.

The program will rely on the input and support of industry partners who are interested in hiring within Rhode Island and are dedicated to playing a key role in designing training and work-place experiences. These industry partners will help to inform the curriculum of the program to ensure that the students are workforce ready and graduate with industry-recognized certificates.

The pilot project will focus on Culinary Arts starting in April 2016 for up to 24 out-of-school youth ages 18-24. The curriculum will be 12 weeks and include a paid internship opportunity with local culinary-related businesses. Beyond industry-vetted training, the students will also receive basic education remediation and transcript reviews to set them on a path to credit recovery to obtain a high school degree and to connect with post-secondary opportunities.

During the pilot, data will be collected to inform next steps for potentially bringing the initiative to scale in other schools with other industry focuses.

Providence/Cranston Workforce Development Board Electric Boat Subcommittee

In July 2015, Mayor Elorza created a subcommittee of the Providence/Cranston Workforce Development Board to explore connections between the PCTA and Electric Boat. Electric Boat was recently awarded a Real Jobs Rhode Island grant by the Governor's Workforce Board to create training programs for a medium-to-long-term pipeline of skilled workers to fill an estimated need for more than 10,000 skilled workers in the maritime manufacturing industry over the next 10 years. This subcommittee succeeded in working with Electric Boat to include the PCTA as a partner in the implementation portion of the grant so that CTE graduates have the opportunity to be included in this training pipeline.

Administrators from PPSD and the PCTA are joining Electric Boat and other partners on the grant to pursue the next steps for connecting students to this training opportunity. Thus far, the PCTA has successfully trained instructors in marine welding at the Shipbuilding/Marine Trades and Advanced Manufacturing Institute (SAMI) at the New England Institute of Technology, based on the needs of Electric Boat. With these instructors, the school has begun to train students from the general construction program in marine welding. These students will be placed in summer internships at Electric Boat before their senior year and will be considered for employment after graduation.

Next year, the PCTA will offer welding training and certification opportunities for students in their senior year across four different CTE strands. Electric Boat will provide welding books and has provided the PCTA with the specific NCCER modules and curriculum needed to prepare students. This initiative will prepare approximately 60-70 students next year to be considered for opportunities at Electric Boat.

This collaboration with Electric Boat is a model that should be extended to additional industries in order to better connect CTE students to opportunities for skilled and high-pay work in Rhode Island.

Apprenticeship Opportunities

According to the Rhode Island Department of Labor and Training (DLT), there are approximately 1,400 registered apprentices and 51 registered apprenticeship programs in Rhode Island, listed in Appendix C. Apprenticeship is a combination of on-the-job learning and related classroom instruction in which workers learn the practical and theoretical aspects of a highly skilled occupation over the course of two to four years. It is sponsored jointly by employers and labor unions, individual employers, and/or employer associations. While apprenticeships have traditionally been associated primarily with the building trades, there are an increasing number in middle-skill occupations in healthcare, information technology, and advanced manufacturing to meet industry demands of the future. The following sections offer background on apprenticeship articulations offered at PPSD currently and one potential opportunity for expansion of formal articulation agreements for CTE graduates.

Apprenticeship Articulations at PPSD

Currently, four programs in the building trades at the PCTA include articulation agreements through the RI Construction Academy for students to earn advanced standing in a registered apprenticeship. The four programs include: Carpentry/Home Building, Electrical Technology, HVAC-R, and Plumbing Technology. Upon successful completion of the program and the stipulations of the RI Construction Training Academy, students can enter their corresponding apprenticeship program at the 2nd year classroom level. The RI DLT Apprenticeship Office also has the ability to grant certification for one year of schooling in a Registered Apprenticeship trade.

Apprenticeship Rhode Island

The Providence Plan (ProvPlan) and the RI DLT have formed a partnership to design, launch, and operate Apprenticeship Rhode Island to create new apprenticeship opportunities in Rhode Island.

ProvPlan was awarded $5 million through a U.S. Department of Labor American Apprenticeship Grant to launch the program over a five-year period. Through this program, ProvPlan will develop, expand, and implement innovative high-quality registered apprenticeship programs to meet the identified skilled workforce needs of Rhode Island employers. Key employer partners include CVS Health, Atrion and Care New England. Industry association partners include the RI Manufacturers Association, the Southeast New England Defense Industry Alliance, and the RI Marine Trades Association. In accordance with industry demand, the program is creating 12 new registered apprenticeships in the fields of advanced manufacturing, marine trades, and health care. The complete list of new apprenticeships is included in Appendix D.

Two primary goals of the program will be to place 1,200 Rhode Island residents into newly registered apprenticeships in by 2022 and to have at least 30% of the new apprentices come from underrepresented groups such as women and minorities. Through this project, Apprenticeship Rhode Island will be established as the formal intermediary of apprenticeships in Rhode Island.

Seventy-two percent of new apprenticeships will be in entry-level positions, while 28 percent will be for incumbent workers who will receive significant upskilling that will generate demand for more entry-level workers. While the majority of the apprenticeship programs will be newly registered under this project, a significant portion will occur through an expansion of existing apprenticeship programs – notably Atrion in IT and CVS Health in pharmacy services.

Goals of the new Apprenticeship Rhode Island system include alignment with public workforce investment and connection of Rhode Island jobseekers to employment as apprentices through effective recruitment, assessment, career counseling, and preparatory programs such as pre-apprenticeships.

VI. CTE Task Force Recommendations and Action Plan

The CTE Task Force has identified three major necessary paths forward to create a stronger CTE system that synthesizes and builds upon the aforementioned initiatives and programs. These themes include 1) refining the vision, model, and integration of CTE with workforce development, 2) fully engaging industry partners into CTE implementation, and 3) ensuring that the CTE curricula is rigorous and relevant.

The CTE Task Force proposes an implementation team of three core staff members—one from PPSD, one from the City's Department of Economic Development, and one from Workforce Solutions of Providence/Cranston – to bring these goals to fruition. The implementation team will move forward with the CTE Task Force's recommendations and create a district-wide Advisory Board of industry professionals and community partners to ensure alignment with and accountability to the broader community.

The CTE Task Force puts forth the following recommendations to achieve these goals and improve CTE in Providence:

Refine the vision, model, and integration with workforce development

1. **Create an implementation team with one member from the School Department, Department of Economic Development, and Workforce Board.** Key representatives from PPSD, the Department of Economic Development, and Workforce Solutions will serve as an implementation team for these recommendations, with guidance from the Mayor and Superintendent. PPSD administration should oversee and provide administrative assistance to this team. The team will be responsible for the following immediate actions:
   - Identify priorities and formulate implementation plan and timeline for CTE Task Force recommendations
   - Create and oversee an overall CTE Advisory Board for the district, populating with key collaborative partners in private industry, the non-profit community, and state and local government
   - Engage employers in their workforce initiatives to support internships and pipelines for student employment
   - Identify regulatory/legal, credentialing and policy barriers to effective CTE and propose changes

2. **Institutionalize rigorous criteria to evaluate and align CTE programs.** In order to make decisions for future programming and ensure that all programming aligns to District standards, the Task Force recommends that PPSD utilize the following criteria to evaluate CTE programs:
   - RIDE's CTE Program of Study regulations and CTE Board standards for programs in construction, manufacturing, and health careers
   - A review of curriculum conducted by industry leaders serving on Program Advisory Committees
   - The District's 21st Century curricular goals, as outlined in Recommendation #9
   - Labor market information to determine which programs lead to opportunities in industries with highest projections, such as health care and construction, and stable, living wages
   - Articulation with applicable employment opportunities in registered apprenticeship programs
   - Student outcomes after graduation including enrollment in postsecondary studies, military, and national service opportunities, as well as employment within or outside of CTE field of study. There should be a pilot conducted in 2016-17 in order to develop systems to best track this.
3. **Sustain and expand support of the wider community through after-hours programming in CTE facilities.** The district should fulfill its role as a community leader by giving its students, parents, and the greater community an opportunity to benefit from its CTE facilities in a "Second Technical Day" after school hours. By opening the PCTA to after-hours programming, PPSD can support workforce development in Providence, engaging disconnected youth, families of PPSD students, and the broader community.
   - Continue to host the Opportunities Industrialization Center (OIC) career development programs for unemployed and underemployed adults at the PCTA
   - Engage parents and families of PPSD students through the Office of Family Engagement
   - Consider opportunities to expand the culinary training pilot at PCTA for disconnected youth to additional CTE strands
   - Consider opportunities for businesses to rent facilities after hours for training
   - Create a standard MOU for building and equipment usage
   - Determine a budget for after-hours utilization of the facilities that includes associated costs needed to properly maintain the facilities and equipment due to extra use

4. **Develop career awareness among middle school students for CTE program outreach.** Promote career awareness at an earlier age and educate middle school students about CTE programs available at PPSD.
    - Use and enhance Pre-Kindergarten to Career Continuum
    - Develop professional development opportunities for middle school teachers to introduce career pathways and CTE opportunities to students
    - Strengthen communication with parents and students about CTE programs
    - Find ways to offer hands-on CTE programming at the middle school level, such as Career Exploration days and afterschool programs

Fully engage industry partners into CTE implementation

5. **Create a district-wide Advisory Board of industry professionals and community partners to advise CTE programming across PPSD.** The implementation team will form a district-wide Advisory Board to engage employers and make recommendations for the direction and content of CTE programs at PPSD. The district-wide board should inform strategic decision-making about programs, fundraising, and how to build career awareness and pathways into the curriculum for students K-12. The Advisory Board will:
    - Work with the implementation team to engage employers to support internships and pipelines for student employment
    - Work with the implementation team to identify regulatory/legal, credentialing and policy barriers to effective CTE and propose changes
    - Work with the Program Advisory Committees to provide feedback on CTE curricula
    - Submit regular reports on the progress of the recommendations

6. **Engage local employers to develop opportunities for student internships.** The District must develop clear protocols for student internships, including benchmark grades and performance for an internship placement, and memoranda of understanding with employers to clarify their role as hosts to students. The District must engage local employers and cater internship programs to their specific employment needs and initiatives, and build accountability and expectations for students through embedded workplace readiness training in all CTE programs.

   - CTE Coordinators should assist students in identifying internship opportunities and ensure that the student is adequately prepared for a workplace experience
   - Develop an educational contract or memoranda of understanding for internships that clearly sets the objectives for the experience and delineates roles of the employer and obligations of the school, including points of contact at the school and rubrics for employers to regularly evaluate student performance
   - Clearly define liability policy for paid and unpaid student internships on external worksites
   - Consider opportunities to assist businesses in supporting students, such as trainings or orientations for employers who are hosting students

7. **Strengthen linkage with registered apprenticeship programs.** CTE programs of study should be explicitly linked to applicable opportunities in registered apprenticeship programs when available. workplace readiness training in all CTE programs.

   - Coordinate with Apprenticeship Rhode Island to align CTE programs to employment opportunities in newly registered apprenticeships and traditional apprenticeships

Ensure CTE curriculum is rigorous and relevant

8. **Prioritize opportunities for concurrent or dual enrollment with higher education.** In order to give students a pathway toward earning a post-secondary certification or degree, PPSD must ensure that there are clear opportunities to earn relevant post-secondary credits while enrolled in CTE programs.

    - Pilot the P-TECH model, which prepares students for an Associate's Degree, for 50 students at PCTA to begin in the 2016-17 school year
    - Through Prepare RI, develop opportunities for dual and concurrent enrollment for students
    - Develop further articulation agreements with local post-secondary institutions

9. **Develop and implement a holistic rubric for 21st Century Skills to be embedded across curricula for the entire district.** The district should adopt a 21st Century Skills framework that includes the workplace readiness and social-emotional skills necessary for employment. PPSD should design a 21st Century Skills rubric for the entire district, while also gaining clarity for skills that should be elevated specifically for CTE programs to enhance student workplace readiness.
    - Teachers will use these rubrics to plan lessons that correspond to 21st Century Skills
    - Feedback from employers during work-based learning experiences should include 21st Century Skills evaluation
    - Students should be given opportunities for self-reflection on 21st Century Skills

10. **Promote greater integration of academic core instruction into CTE strands.** Teaching staff should be trained in contextualized academic learning, for instance the Math-in-CTE model, in CTE programs. The Task Force recommends the following next steps for the District to properly support teachers to integrate core academics into CTE instruction:
    - Consider opportunities for embedded academic credits in CTE programs
    - Create curriculum crosswalks for technical standards and common core academics
    - Allocate more time for academic teachers and CTE instructors to plan lessons together
    - Strengthen professional development opportunities to support contextualized academic instruction

11. **Strengthen holistic support systems for students in CTE programs.** To ensure that students are properly supported during a career program, guidance counselors and CTE coordinators must be well versed in career pathways and opportunities for students outside of school and after graduation. Additionally, guidance counselors should assist students to take advantage of opportunities like dual enrollment in college coursework, advanced courses, work-based experiences, expanded learning opportunities (ELOs) and career-related after school and summer programs.

    - Strengthen guidance on career pathways, particularly for students in first year of CTE program
    - Collaborate with Workforce Solutions of Providence/Cranston to discuss the capacity of youth center programs to support CTE students
    - Include adult mentoring component and networking opportunities with businesses
    - Assist students in obtaining summer employment and internships
    - Help advanced students enroll in post-secondary opportunities
    - Prepare students for career transition before workplace experiences and graduation

Appendix A – Providence Public School District CTE Overview

2015-2016 CTE Programs of Study

Program Name	Program Location
Automotive Technology	Providence Career and Technical Academy
Carpentry/Home Building	Providence Career and Technical Academy
Construction Craft Laborer	Providence Career and Technical Academy
Cosmetology	Providence Career and Technical Academy
Culinary Arts	Providence Career and Technical Academy
Electrical Technology	Providence Career and Technical Academy
HVAC-R	Providence Career and Technical Academy
Graphics Communications	Providence Career and Technical Academy
Pastry Arts	Providence Career and Technical Academy
Plumbing Technology	Providence Career and Technical Academy
Pre-Engineering	Providence Career and Technical Academy
Business Entrepreneurship	Central High School
Law, Public Safety, & Security	Central High School
• Performing Arts	Central High School
Pre-Engineering	Mount Pleasant High School
Computer Networking	Mount Pleasant High School
Teacher Academy/Early Childhood	Mount Pleasant High School
Hospitality/ Travel and Tourism	Mount Pleasant High School
• Law Enforcement	Mount Pleasant High School
Bio-Technology	Juanita Sanchez Education Complex
Community Development	Juanita Sanchez Education complex
Aquaponics	Hope High School
• Theatre	Hope High School
• Music	Hope high School
• Visual Arts	Hope High School
Mobile Apps & Game Design	Hope High School
Cisco Computer Networking, Security and Forensics	Academy of Career Explorations **
Marketing and Social Media	Academy of Career Explorations **
Computer Programming and Web Development	Academy of Career Explorations **
Performing Arts	Trinity Academy for Performing Arts ***

Programs with a • are in planning stages.

** Academy of Career Explorations is an in-district charter school
*** Trinity Academy for Performing Arts is an independent charter school outside of the district

Appendix B: Performance metrics for the 2013-2014 CTE Offerings at PPSD

	Program	Total Enrollment	# Of Completers in 2013-14	Earned Credentials	Earned Post-Sec. Credits	Adv. Standing Apprentice	4 year Grad. Rate
Central HS	Law and Public Safety	86	46	0%	28%	0%	96%
Juanita Sanchez	Biotechnology	41	41	0%	56%	0%	98%
Hope Academy	Computer Information Systems	72	24	0%	13%	0%	79%
	Visual Arts	233	69	0%	0%	0%	55%
Mount Pleasant HS	Teacher Academy	44	13	38%	69%	0%	100%
Providence Career and Technical Academy	Automotive Technology	45	10	43%	100%	0%	100%
	Construction Technology	39	10	0%	100%	100%	100%
	Cosmetology	64	14	57%	36%	0%	100%
	Culinary Arts & Hospitality	43	11	55%	100%	0%	82%
	Electrical Technology	50	5	0%	100%	100%	100%
	Graphic Communications	41	15	7%	80%	0%	73%
	HVAC	35	7	0%	100%	88%	100%
	Pastry Arts	53	8	100%	100%	0%	88%
	Plumbing & Pipefitting	36	1	0%	100%	100%	100%
All Programs		**882**	**274**	**21%**	**70%**	**28%**	**91%**

Appendix C: Registered Apprenticeships in Rhode Island

In Rhode Island, active registered apprenticeship programs include:

- Bricklayers
- Cabinet Makers
- Carpenters
- Cement Finisher
- Childcare Specialist
- CNC Machinist
- Construction Craft Laborers
- Construction Managers
- Drywall Finishers
- Electricians
- Elevator Construction Mechanics
- Exterior Marine Painters
- Finishers
- Floor Layers
- Flooring
- Glaziers
- Insulators
- Interior Marine Painters
- Internetworking Associates
- Iron Workers
- Machinists
- Maintenance Electricians
- Marine Carpenters
- Marine Electric & Electronic Technicians
- Marine Rigger
- Oil Burner Technicians
- Operating Engineers
- Paint/Caulk/Cleaners
- Painters
- Piclas/Painting Industrial Coating Lining Specialist
- Pile Drivers
- Pipefitters
- Pipefitter II
- Pipefitter/Refrigeration
- Pipefitter/Refrigeration II
- Plasterers
- Plastic Mold Maker
- Plastic Process Technician
- Plumbers
- Propane Gas
- Refrigeration
- Refrigeration II
- Renewable Energy Contractors Rec. #100
- Roofers
- Sheet Metal Workers
- Sheet Metal Worker II
- Sprinkler Fitters
- Stone Masons
- Telecomm Technicians
- Tile Layer
- Tool and Die Maker

Source: 2016 RI Department of Labor and Training, Office of Apprenticeship

Appendix D: New Registered Apprenticeships through ProvPlan's American Apprenticeship Grant

Information Technology (IT)						
Registered Apprenticeship Occupation	SOC	Wage	Yr 1	Yr 2-3	Yr 4-5	Total
IT Engineer Program(s): Associate - Senior Eng.	11-3021	$22-$42	24	116	112	252
IT Project Manager Programs	15-1199		0	24	38	62
Desktop/Application Analyst Programs (IT/HC)	15-1151	$25-$35	15	40	40	95
ICD-10 Medical Coder Program (IT/HC)	29-2071	$25.14	12	60	60	132
Cybersecurity Program (IT/HC/Defense)	15-1122	$41.43	10	30	36	76
SUB-TOTALS			**61**	**270**	**286**	**617**

Advanced Manufacturing (AM) & Marine Trades (MT)						
Registered Apprenticeship Occupation	SOC	Wage	Yr 1	Yr 2-3	Yr 4-5	Total
CNC Machine Operators/Programmers (AM/MT)	51-4011	$24.13	15	40	40	105
Tool and Die Maker (AM)	51-4111	$24.08	0	20	20	40
Fiberglass Laminators and Fabricators (MT)	51-291	$14.57	0	10	20	30
Quality Control Systems Manager (AM)	11-3051	$16.57	6	20	24	50
SUB-TOTALS			**21**	**90**	**104**	**225**

Healthcare (HC)						
Registered Apprenticeship Occupation	SOC	Wage	Yr 1	Yr 2-3	Yr 4-5	Total
Community Health/ Home Health Nurses (RN)	29-1141	$31.48	15	65	70	150
Licensed Chemical Dependency Professionals	21-1011	$18.52	0	48	60	108
Pharmacy Technicians	29-2052	$14.10	20	40	40	100
SUB-TOTALS			**35**	**153**	**170**	**358**

GRAND TOTALS			**117**	**513**	**560**	**1200**

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Note: the Providence-Fall River-Warwick, RI-MA Metropolitan Statistical Area includes Attleboro city, MA, Barrington town, RI, Bellingham town, MA, Blackstone town, MA, Bristol town, RI, Burrillville town, RI, Central Falls city, RI, Charlestown town, RI, Coventry town, RI, Cranston city, RI, Cumberland town, RI, East Greenwich town, RI, East Providence city, RI, Exeter town, RI, Fall River city, MA, Foster town, RI, Glocester town, RI, Hopkinton town, RI, Jamestown town, RI, Johnston town, RI, Lincoln town, RI, Little Compton town, RI, Middletown town, RI, Millville town, MA, Narragansett town, RI, Newport city, RI, North Attleborough town, MA, North Kingstown town, RI, North Providence town, RI, North Smithfield town, RI, Pawtucket city, RI, Plainville town, MA, Portsmouth town, RI, Providence city, RI, Rehoboth town, MA, Richmond town, RI, Scituate town, RI, Seekonk town, MA, Smithfield town, RI, Somerset town, MA, South Kingstown town, RI, Swansea town, MA, Tiverton town, RI, Warren town, RI, Warwick city, RI, West Greenwich town, RI, West Warwick town, RI, Westport town, MA, and Woonsocket city, RI.

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