

CTE Report to  
SPS School Board  
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## Table of Contents

Preface .....	2
Introduction .....	6
Report .....	11
Plans for Improving Design and Delivery of CTE Programs .....	15
Strategy 1: Evaluate CTE program offerings to provide viable career pathways for future and current workforce demands. ....	15
Strategy 2: Increase rigor through industry-recognized credentials, dual credit, and cross-credit opportunities. ....	20
Strategy 3: Expand internships and Work-site learning opportunities. ....	22
Strategy 4: Improve facilities and viability of the Seattle Skills Center. ....	24
Strategy 5: Improve central office program administration and support to schools .....	26
Strategy 6: Expand Partnerships and Community Outreach .....	27
Strategy 7: Engage in recruitment and marketing to increase enrollment. ....	30
Appendix A: Central CTE Staffing.....	32
Appendix B: Career Clusters and Pathways.....	33
Appendix C: SPS Participation in CTE & Career Pathways .....	35

## Preface - Why Career & Technical Education/Career-Connected Learning? Why Now?

There is a growing interest in Seattle and across the state and nation to have K-12 schools do a better job of giving students meaningful opportunities to orient themselves, explore, and prepare for careers. Given an alignment in vision of what needs to be done across several key stakeholders, Seattle Public Schools is well poised to convert this interest into expanded and improved career-connected learning programs, initiatives and partnerships across the city.

Several recent headlines and studies on the importance of preparing students early to think about a wide range of careers tell the story. The Puget Sound Business Journal, Washington Business Roundtable, and others have developed analyses and reports with essentially the same conclusion: we need to do more to help match our current students with the many job opportunities that will become available in our region in the coming years. In 2016, the Puget Sound Business Journal reported that Washington isn't producing enough qualified workers to supply talent-starved tech companies. Amazon, Microsoft and other [companies] create more than 3,500 software engineer jobs each year, but Washington state only graduates 500 workers qualified for those roles. (*Source: Washington Technology Industry Association*). The *Washington Business Roundtable* released an analysis that in the next 5 years in Seattle, there will be 740,000 job openings with 300,000 net new jobs and including 200,000 tech jobs. Moreover, Sound Transit, the Port, the City of Seattle report the need to find the next generations of employees given anticipated retirement.

In recent months, an inventory of career-connected high school enrollment has been compiled and analyzed, strategies to improve career education have been identified, and objectives developed to measure future growth and success. Both the city and school district are in growth mode. Increased enrollment, a desire for stronger workforce development and interest in new schools focused on career connected learning point to exciting times in the Seattle Public Schools.

[Seattle is currently the nation's fastest-growing big city](#). In the last decade alone, an additional 8,000 students have enrolled in Seattle Public Schools, and by the 2021-22 schoolyear, the number of high school students will grow by an additional 1,975. In addition, Seattle's mayor recently signed an [executive order](#) making all SPS graduates eligible for two years of college tuition at Seattle Colleges, speculating that Seattle may experience an even greater influx of high school students in coming years.

At the same time, there is growing interest in better supporting career-connected learning in K-12 given concerns that the plan to have all students earn a 4-year liberal arts degree is not yet viable. Multiple sources have documented the "leaky pipeline" as the percentage of SPS students when looking at how many graduate from high school, matriculate in college, complete their first year, persist through the second year, and complete a degree. National Clearinghouse data and a recent report from the Washington State Auditor reveal that less than forty percent of high school graduates in Washington state complete a post-secondary degree seven years after graduating. Adding to this, other reports have shown that a bachelor's degree may not always be the right pathway for everyone to good-paying jobs: <https://www.bloomberg.com/view/articles/2017-11-14/you-can-get-a-good-job-without-a-bachelor-s-degree>.

This analysis and reexamination of our basic college and career readiness strategies are occurring at a time in Seattle where there is great economic anxiety about what future growth will mean for students and their families and about the gap between those who will succeed and those who may not. It is also occurring within the larger work to prepare students for increased graduation requirements, particularly

the 24-credit requirement which every student beginning with the Class of 2021 is required to meet. The district's plan to respond to this requirement is to expand credit-earning opportunities and provide longer instructional blocks at all high schools so that students have significantly more opportunities to explore career-connected learning and career pathways during their K-12 education.

Given this context, many stakeholders are understandably pushing for the expansion of CTE and career-connected learning providing these programs can meet the city's and its families' needs as well as other benefits. Several recent studies and reports have highlighted these benefits. For example, the Fordham Foundation's study of CTE programs in Arkansas revealed that: the more CTE courses students take, the better their education and labor market outcomes; students who concentrate see additional benefits, especially when it comes to high school graduation; and male and low-income students see the largest benefits to concentrating (Source: <http://edex.s3-us-west-2.amazonaws.com/publication/pdfs/%282016.04.07%29%20Career%20and%20Technical%20Education%20in%20High%20School.pdf>). The Association for Career and Technical Education and others have also issued several compelling reports on the ways in which CTE can be a key element in high school transformation initiatives and serving as an effective dropout prevention strategy. ([https://www.acteonline.org/uploadedFiles/Assets\\_and\\_Documents/Global/files/Reinventing\\_American\\_High\\_School.pdf](https://www.acteonline.org/uploadedFiles/Assets_and_Documents/Global/files/Reinventing_American_High_School.pdf); <http://dropoutprevention.org/wp-content/uploads/2015/03/NDPCN15EffectiveStrategies.pdf>). Closer to home, OSPI identified CTE as a key element of closing the gap in on-time high school graduation and provided a specific budget allocation in 2015-17 biennium for this work (<http://www.k12.wa.us/LegisGov/2016documents/AD-DropoutandGraduationRateImprovements.pdf>) and the Washington State Association for Career and Technical Education cites 2016 state-level data from OSPI indicating that CTE participants graduate at 92% vs 78% state average (<http://www.wa-acte.org/Pdf/CTEOnePagerAsk%20Unbranded.pdf>).

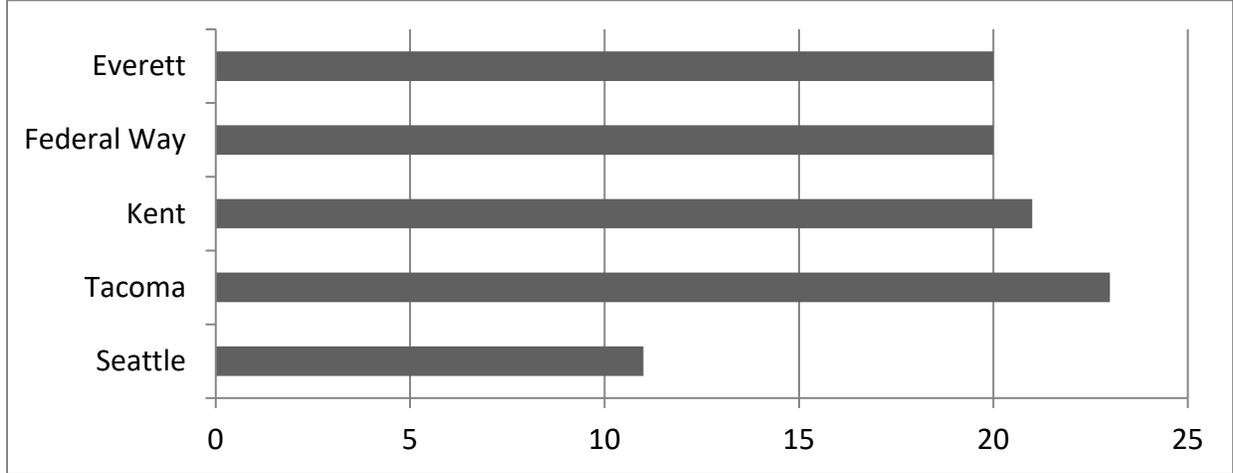
Even more forcefully, the recent Washington State Audit called for an expansion of CTE programs across the state recommending that the legislature and OSPI require districts to submit evidence of high local labor demand for existing CTE programs, emphasize to school counselors the importance of discussing CTE and apprenticeship paths with students, update the list of high-demand CTE programs, and strengthen requirements to assess whether CTE programs correspond with local high demand (Source: <http://www.sao.wa.gov/state/Pages/PerformanceAudit.aspx>). This interest in expanding career and technical education has already manifested itself in concrete action at the local level with the SPS Board CTE Partnership Resolution passed in November, at the state level with Governor Inslee's launch of Career Connect Washington, and at the national level with the Presidential Executive Order Expanding Apprenticeships in America.

That said, there is a great deal of work to be done in Seattle Public Schools to match this exploding interest and excitement with specific CTE offerings. In January, a data set of enrollment in career-connected coursework during the current school year was analyzed. Compared to neighboring Tacoma (23%), Kent (21%), Everett (20%) and Federal Way (20%), Seattle's high school career-connected learning only represents 11% of total high school enrollment.<sup>1</sup>

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<sup>1</sup> Excluded from this data set are the 156 students enrolled in a 2017-18 Skills Center program, since it is a uniquely different program differently funded.

Table 1: High School Career-Connected Learning Course Enrollment as a Percentage of Total High School Enrollment, Compared with Benchmark Districts (Source: Seattle Public Schools)



Further analysis was completed to determine enrollment by high school by career grouping. (See Table 3 below.)

In response to all of these reports, analyses, and interest, we have the following theory of change for Seattle Public Schools around career-connected learning: if students have access to rigorous, relevant, authentic learning in career-connected courses, then students will more effectively navigate high school and post-high school opportunities including living wage jobs and post-secondary education leading to viable careers. Seattle Public Schools has therefore identified **seven strategies** to strengthen career and technical education in ways that will afford its students more opportunities to: choose from robust career-connected courses of study; learn in relevant, hands-on learning environments; and apply their knowledge with real-world application. These strategies are addressed in detail in this report. Here is a summary of these seven strategies and the work we hope to accomplish this year and in subsequent years:

Strategy	Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
Strategy 1 – Career pathways	<ul style="list-style-type: none"> <li>• Evaluation of current programs and pathways</li> <li>• Development of Health Services Pathway including High School+3 initiative</li> <li>• Leveraging of budget arenas to promote strategic investments in pathways in our high schools</li> </ul>	<ul style="list-style-type: none"> <li>• Development of a certain number of pathway programs per high school</li> <li>• Development of Informational Tech Pathway including High School+3 initiative</li> <li>• Building of MS programs to collaborate with neighboring HS program offerings</li> <li>• Collaboration with MS to offer students more CTE exploratory courses</li> <li>• Expansion of MS CTE offerings to all schools</li> </ul>
Strategy 2 – Rigor in all programs	<ul style="list-style-type: none"> <li>• Development of common criteria</li> <li>• Refinement of approach to cross-crediting</li> <li>• Increase in access for students to Dual Credit through Seattle Colleges</li> <li>• Increase in teacher support/training for Dual Credit</li> </ul>	<ul style="list-style-type: none"> <li>• Formal evaluation of all programs based on this analysis</li> <li>• Articulation of dual credit opportunities for students to other colleges</li> </ul>

Strategy 3 – Work-site learning	<ul style="list-style-type: none"> <li>• Hiring of Career-Connected Learning Coordinators for all high schools</li> <li>• Development of Work-Site Learning Employability Bootcamp for students</li> </ul>	<ul style="list-style-type: none"> <li>• Attainment of specific target goals for internships, apprenticeships, and enrollment in Career Choices classes</li> </ul>
Strategy 4 – Skills Center	<ul style="list-style-type: none"> <li>• Application of this plan’s strategies to the Skills Center program</li> <li>• Attainment of increase in Industry Recognized certificates and earning of dual credits through Seattle College partnerships</li> <li>• Increase in internship and Career Connected Learning experiences for students</li> </ul>	<ul style="list-style-type: none"> <li>• Development and implementation of long-term plan for Skills Center</li> </ul>
Strategy 5 – Central team and budget	<ul style="list-style-type: none"> <li>• Hiring of staff to support the implementation of Strategies 1-7</li> <li>• Shift in work stream to better support new program development, personalized support for buildings</li> <li>• Year two focus on priority spending based on Needs Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Updated CTE funding guidance within the district’s Weighted Student Funding Formula and Goal book</li> <li>• Support of new program development</li> <li>• Plan to support new hires to CTE</li> </ul>
Strategy 6 – Partnerships	<ul style="list-style-type: none"> <li>• Development and distribution of CTE Partnership Framework, including the process for CTE Franchises</li> </ul>	<ul style="list-style-type: none"> <li>• Attainment of specific targets for developing partnerships, including CTE franchises</li> </ul>
Strategy 7 – Recruitment & marketing	<ul style="list-style-type: none"> <li>• Development of new recruiting and marketing campaign for the district’s career-connected learning plans.</li> </ul>	<ul style="list-style-type: none"> <li>• Refinement of recruiting and marketing campaign for the district’s career-connected learning plans</li> <li>• Development and distribution of long-term vision for career-connected learning</li> </ul>

SPS Career and Technical Education will collaborate with business, government, and philanthropic partners, not only in planning with a new potential high school at the Seattle Center, but in planning all high schools in the District Plan to develop a robust career-connected learning program. Leaders throughout the city and region are poised to work together to: create interest and more fully engage students in career-connected learning; strengthen community connections with schools; provide authentic experiences and academic supports; deliver stackable credentials and degrees; and help the city’s future citizenry be well-prepared for living wage jobs and fulfilling careers.

## Introduction

This Career and Technical Education (CTE) Annual Board Report provides an overall description of the CTE program in Seattle Public Schools; a report on indicators for enrollment trends, equitable access to courses, and credit-earning opportunities; and a description of strategies that will be employed to improve the CTE program. It is the policy of the Seattle School Board to annually review and approve the district's plan for the design and delivery of its Career and Technical Education program (SPS Board Policy No. 2170).

Following the strategic approach in the 2016-17 CTE Annual Board Report, this year's report also includes a description of strategies to continue improving the CTE program, whereas previous annual reports did not include such public commitments to carrying out specific strategies. Subsequent annual reports will address progress and outcomes for each of the identified strategies with rationales for revisions. Please note that Carl Perkins funding mandates strategies outlined in this report all CTE programs will focus on a five-year implementation and growth for school years 2018-19 to 2022-23.

## Program Description

### Program Design

Career and Technical Education is a planned program of courses and standards that begins with exploration of career options, supports academic and life skills, and enables achievement of high academic standards, leadership development, and preparation for career and college. A sequence of courses can provide students with employability skills for internships, apprenticeships, preparation for industry certification, and pursuing career options in college.

Through Career and technical education, students explore and prepare for career opportunities and learn how other education disciplines are applied in real-life. Students gain leadership skills through activities in their classrooms and participation in Career and Technical Student Organizations (CTSO's) such as DECA (Marketing), Future Business Leaders of American (FBLA), Skills USA, Family Career and Community Leaders of America (FCCLA), HOSA-Future Health Professionals, and First Robotics. CTE prepares students to succeed in high demand occupations in the 21<sup>st</sup> century competitive global economy by promoting quality instructional partnerships with business, industry, and the post-secondary organizations. Courses are formally revised and submitted to the Office of the Superintendent of Public Instruction for re-approval every four years to remain current with industry standards.

Nationally, CTE is organized around the 16 *Career Clusters*. In Seattle Public Schools, these are organized and consolidated into the following pathways, with central office certificated specialists to support current programs, research new programs and initiatives, remain OSPI compliant, and work with industry partners for advice to keep our programs contemporary:

- Arts, Communications, and Media
- Business, Marketing, Information Technology and Computer Science
- Environmental Science and Agriculture
- Health & Human Services, and Family & Consumer Science
- Science, Engineering, and Industry

Within these pathways, examples of our high-quality, award-winning, and high-profile programs include:

- C89.5 KNHC Radio Station program at Nathan Hale
- Film/Video at Ballard, Seattle Center School, Cleveland, Hale, and Franklin
- Culinary at Roosevelt, Ingraham, West Seattle, and Skills Center @ Rainier Beach
- Photography at Garfield and AP Photography at Ballard
- Automotive Tech at Ingraham, West Seattle, and Skills Center
- Marketing at Ballard, Garfield, Hale, Roosevelt, and West Seattle
- Graduation, Reality and Dual-Role Skills (GRADS) Teen Parent Program at South Lake
- Worksite learning Internship Program
- Biotech at Ballard
- Biomed at Cleveland
- AP Psychology at Roosevelt and IB Psychology at Ingraham
- IB Business Courses at Ingraham, Rainier Beach, Chief Sealth
- National Academy Foundation, Academy of Finance at Ballard, Chief Sealth, and Franklin
- National Academy Foundation Academy of Hospitality at Chief Sealth

### STEM (Science, Technology, Engineering, and Math)

STEM is a priority area in CTE, with examples such as Aerospace Science and Engineering, Construction/Pre-Apprenticeship, Medical Careers and Medical Assisting, Animation and Gaming, and Maritime Science and Engineering. The Biomedical program exists at Cleveland, and the PLTW Engineering programs exist at Ballard, Cleveland, Franklin, Garfield, and Roosevelt High Schools. PLTW Gateways to Technology is provided at Denny, Madison, Mercer, Robert Eagle Staff, Washington, and Whitman Middle Schools. Other STEM courses include KNHC – Radio/Multimedia Broadcasting at Nathan Hale High School; Woods at Ballard, Franklin, and West Seattle High Schools; Biotechnology at Ballard High School, and Computer Science at all comprehensive high schools and seven middle schools. Computer Science courses have expanded in part due to support from the Microsoft-sponsored TEALS (Technology Education and Literacy in Schools) program, which provides teacher mentoring and co-instruction from qualified industry professionals.

### Academies

Academy structures provide coherence in CTE programs and connect students and teachers to industry professionals. Examples in SPS include Seattle Academy Foundation support for the NAF Academy of Finance at Chief Sealth, Franklin, and Ballard High Schools and the NAF Academy of Hospitality and Tourism at Chief Sealth High School. Ballard High School provides the Maritime and Biotechnology Academies, and Franklin High School provides the Public Service Academy and the CREATE Academy. Cleveland High School supports an academy model through its School of Life Sciences and School of Engineering and Design.

### Seattle Skills Center

Skills Center programs are half-day programs open to all SPS students aged 16-20. Students attend their comprehensive high school and are provided transportation to Skills Center sites co-located on SPS campuses for 2½ hour sessions of their school day. For the 2018-19 school year, the Seattle Skills Center will offer 15 distinct courses available at eight sites:

## Health & Human Services Pathways

- Administrative Medical Office Assistant (*Medical office work in clinics and hospitals*), located at John Marshall (returning to Lincoln HS in 2019-20)
- Health Sciences / Medical Assisting (*Doctor and patient assisting in doctor offices, clinics, allied health professions*) located at John Marshall (returning to Lincoln HS in 2019-20)
- Nursing Assistant (*Patient care in Skilled Nursing Facilities*), located at West Seattle HS
- Culinary Arts (*Training for food preparation in a commercial kitchen*), located at Rainier Beach HS
- Teaching Academy: Careers in Education (*Provides opportunities for students to get experience working in classrooms and prepares them for success in post-secondary teaching programs and careers such as para educator and future teacher*), located at South Lake HS

## Science, Engineering, and Industry Pathways

- Aerospace Science & Technology (*Aerospace/aircraft manufacturing*), located at Rainier Beach HS
- Automotive Technology (*Automobiles and their systems and engines, maintenance and repair*), located at Washington MS
- Construction Trades (*Explore all of the construction trades and build structures*), located at Rainier Beach HS
- Firefighting & Emergency Medical Services (*Firefighter training, EMS/Ambulance and First Response teams*), located at Rainier Beach HS
- Maritime Science & Technology (*Maritime/vessel manufacturing*), located at Rainier Beach HS
- Maritime Vessel Operations (*Prepares students for careers in the maritime industry: operating cargo ships, fishing boats, Washington State Ferries, tug boats, etc.*), located at Seattle Maritime Academy, Seattle Central College

## Technology Pathways

- Information Technology Specialist: Computer Networking: (*Network programming, computer hardware*), located at Rainier Beach HS
- Digital Animation & Game Design (*2D & 3D animation: designing video games*), located at Seattle Center Armory
- Digital Animation & Game Design (*programming games*), located at Seattle Center Armory
- Interactive Media Arts and Technology (*Prepares students to apply artistic, technical principles to the communication of information and ideas through the use of multi-media technology*), located at Franklin HS

In addition to school-year programs, the Skills Center offers summer introductory courses available to all incoming 9<sup>th</sup> grade through 12<sup>th</sup> grade students. With new high school graduation requirements, summer school provides a valuable opportunity for students to earn 0.5 CTE credit towards their high school graduation requirements. The following are tentatively planned summer Skills Center courses for 2018, and will be offered at various sites throughout the city:

- 9<sup>th</sup> Grade Advantage, (*The “9<sup>th</sup> Grade Advantage” course will help prepare incoming 9<sup>th</sup>*

*graders for high school, and includes training in computer literacy, introduction to career options, time to focus on their High School and Beyond Plan, and a chance to earn a .5 HS CTE credit. Will include field trips to businesses in Seattle representing a wide range of industries and careers. This course is intended to give students a jumpstart to being "Seattle Ready.")*

- Intro to Aerospace Science & Technology (*Aerospace/aircraft manufacturing*)
- Intro to Automotive Technology (*Vehicle maintenance*)
- Intro to Computer Applications (*Microsoft Office applications IE: Word, Excel, etc.*)
- Intro to Construction Trades (*Building tiny houses, carpentry, tool skills*)
- Intro to Culinary Arts (*Commercial food preparation*)
- Intro to Digital Animation & Game Design (*"AIE CyberCamp": 2D and 3D animation and game design*)
- Intro to Engineering (*Problem-based learning, modeling with materials and computer software*)
- Intro to Firefighting & Emergency Medical Services (*Firefighting and EMS/ambulance/first response*)
- Intro to Graphic Arts (*Computer-based design and production*)
- Intro to Maritime Science (*Maritime/vessel manufacturing*)
- Intro to Medical Careers (*Broad spectrum of medical careers basic skills*)
- Intro to Multimedia Broadcasting (*Radio and digital media, on- and off-air operations*)
- Intro to Maritime Operations (*working on ships, ferry boats, fishing industry*)
- Intro to Interactive Media Arts and Technology (*Prepares students to apply artistic, technical principles to the communication of information and ideas through the use of multi-media technology*)
- Intro to Teacher Academy: Careers in Education (*Provides opportunities for students to get experience working in classrooms and prepares them for success in post-secondary teaching programs and careers*)
- Introduction to Horticulture (*students will have the opportunity to learn through direct, hands on experiences at the Nathan Hale Urban Farm and gain insight into related careers*)
- Introduction to Molecular Biology Research Techniques (*students learn techniques that research scientists use in the laboratory*)

## Community Partners

Career and Technical Education programs are supported by strong community partners, including the Port of Seattle (King County), the City of Seattle Office of Economic Development, the Seattle Academy Foundation, Architecture Construction and Engineering (ACE) Mentors, the Manufacturing Industrial Council (MIC), and the Seattle Colleges. Additionally, the General Advisory Council (GAC) comprised of industry, labor, post-secondary, community, non-profit organizations, and government members provide support and guidance for the overall CTE program and the Seattle Skills Center, and each program has Program Advisory committees. The following are the Program Advisories:

- Ballard Biotech
- Ballard Maritime
- Health & Human Services Advisory including Health Sciences, Family and Consumer Science and Culinary Advisory Boards
- Science, Engineering & Industry Advisory

- Aerospace and Welding Advisory
- Academy of Finance Board
- Academy of Hospitality and Tourism Board
- KNHC Radio Advisory Board
- Horticulture Advisory Board
- Careers in Education Advisory Board

## Report

### CTE Enrollment Trends

Career and Technical Education enrollment this school year began lower in comparison with the close of the 16-17 school year. The decrease in number of students enrolling in CTE was due in part to districtwide teacher layoffs. Post the first quarter, CTE FTE has stabilized showing a relative increase as compared to last year's average. This is in part to an increase in middle school STEM and opportunities for high school students to enroll in courses for cross credit in science and art. However, high school CTE enrollment has continued to remain between 11-12% of the total general education enrollment, and middle school CTE enrollment has grown to nearly 3% of the total general education enrollment. Seattle Public Schools has much lower CTE enrollment than the 18.52% high school and 6.0% middle school statewide averages.

Additionally, Skills Center enrollment is 1.1% of overall SPS 11<sup>th</sup> and 12<sup>th</sup> enrollment; while the statewide average Skills Center enrollment is 3.5% of overall 11<sup>th</sup> and 12<sup>th</sup> grade enrollment.

YEAR	HIGH SCHOOL	MIDDLE SCHOOL	SKILLS CENTER		TOTAL
			SCHOOL YR	SUMMER	
2009-2010	1501.63	18.37			1520
2010-2011	1464.49	26.78			1491.27
2011-2012	1464.99	50.67			1515.66
2012-2013	1485.54	72.41	50.50		1608.45
2013-2014	1556.49	102.55	65.27	22.47	1746.78
2014-2015	1517.23	143.97	72.07	27.52	1760.79
2015-2016	1539.71	196.71	67.55	37.73	1841.70
2016-2017	1486.21	212.96	69.25	44.70	1813.12
2017-2018 (March Enr. Avg)	1543.76	211.68	85.73	*	1841.17*

### SKILLS CENTER ENROLLMENT (HEADCOUNT)

Year	School Yr (Sept/June)	Summer
2013-14	111/95	263
2014-15	123/116	279
2015-16	88/118	345
2016-17	111/105	447
2017-2018	154/*	**

**CTE ENROLLMENT AS A % OF TOTAL HIGH SCHOOL & MIDDLE SCHOOL ENROLLMENT**

YEAR	HIGH SCHOOL CTE FTE/HIGH SCHOOL FTE		MIDDLE SCHOOL CTE FTE/MIDDLE SCHOOL FTE	
	SPS	WA STATE	SPS	WA STATE
2011-2012	11.51%	18.0%	0.78%	2.6%
2012-2013	11.47%	18.3%	1.08%	3.7%
2013-2014	11.99%	18.3%	1.49%	4.2%
2014-2015	12.02%	18.3%	1.71%	4.6%
2015-2016	11.67%	18.4%	2.77%	5.3%
2016-2017	11.08%	18.4%	2.81%	5.6%
2017-2018	11.33%	18.52%	2.85%	6.0%

**HIGH SCHOOL CTE ENROLLMENT AS A PERCENTAGE OF TOTAL HIGH SCHOOL ENROLLMENT, COMPARED WITH BENCHMARK DISTRICTS**

DISTRICT	HIGH SCHOOL CTE FTE/HIGH SCHOOL FTE
Seattle	11%
Spokane	14%
Everett	20%
Bellevue	12%
Highline	13%
Kent	21%
Tacoma	23%
Federal Way	20%

Access to CTE programs: Enrollment based on demographics

In 2015-16 reporting, participation in CTE coursework by demographic subgroups was similar to the proportion of these subgroups in the overall school district. In the table below, **CTE Participants** are students who enrolled in one or more CTE courses at any level (total = 12,041 students). **CTE Concentrators** are students who enrolled in two or more CTE courses beyond the exploratory level (total = 4,435 students).

**PARTICIPATION IN CTE AND SKILLS CENTER COURSEWORK BY DEMOGRAPHIC GROUPS**

Subgroup	% of CTE Participants	% of CTE Concentrators	% of Overall District
Male	52%	57%	52%
Female	48%	43%	49%
American Indian / Alaskan Native	1%	1%	1%
Asian	19%	20%	15%
Native Hawaiian / Other Pacific Islander	1%	1%	1%
Black / African American	19%	19%	16%
Hispanic / Latino of any race(s)	13%	11%	12%
White	41%	44%	47%
Two or More Races	6%	5%	9%
Limited English	11%	9%	13%
Migrant	1%	0%	0%
Special Education	13%	13%	14%
Low Income	45%	42%	36%

CTE Student Performance Indicators

Performance of **CTE Concentrators** (students who enrolled in two or more years of CTE courses beyond the exploratory level) is assessed by the secondary performance measures set by the Carl D. Perkins Career and Technical Education Act of 2006. The *Reading/Language Arts* and *Mathematics* measures are the percentage of CTE Concentrators who passed the respective Smarter Balanced Assessment. The *Technical Skill Attainment* measure is the percentage of CTE Concentrators who took and passed an industry-designed assessment specific to the course program area. The *Secondary School Completion* measure is the percentage of CTE Concentrators who attained a high school diploma or GED in 2015-16, and the *Graduation Rate* measure is the percentage of CTE Concentrators who were included as graduated in the State’s computation of its graduation rate.

**CARL D. PERKINS PERFORMANCE MEASURES AND LEVELS OF ATTAINMENT**

Performance Measure	2015-16 Level of Performance	Met Target Performance Level?
Reading/Language Arts	82.21%	Yes
Mathematics	80.54%	Yes
Technical Skill Attainment	63.43%	No
Secondary School Completion	91.13%	Yes
Graduation Rate	90.22%	Yes

While most performance targets of CTE Concentrators were met in 2015-16, the target for *Technical Skill Attainment* (88%) was not met. This is largely due to the low number of opportunities provided for students to earn industry-recognized certifications (IRC’s). During the 2016-17 school year the targeted goal was to have all CTE teachers provide an industry recognized assessment. This performance data will be released from OSPI later this Spring.

Industry-recognized credentials, dual credit, and cross-credit

*Industry-recognized certificates (IRC's)*

Below is a partial list of industry-recognized certificates and related nationally-recognized assessments that are available for each course.

**AVAILABLE INDUSTRY-RECOGNIZED CERTIFICATES AND/OR OTHER RELATED ASSESSMENTS**

<b>Course</b>	<b>Certification/State/National Recognition</b>
Aerospace Engineering	Core +
AIE Animation & Gaming	AIE Technical College
American Sign Language (ASL)	Transfer credit with Seattle (Community) Colleges
AP Art	AP 2-D and AP 3-D
AP Economics	AP Economics at Ballard and Garfield
AP Psychology	AP Psychology at Roosevelt
Automotive	Automotive YES –ASE exit exam
Computer Science	AP Computer Science, AP
Family Health, Nursing Assistant, Medical Assisting, Family Relations	CPR and First Aid, HIV/AIDS
Human Development; Child/Parenting	Merit Certification for Learning and Transfer credit to Seattle Central College
IB Psychology	IB Psychology at Ingraham
IT Essentials	A+ and Net+
Marketing	National Professional Certification in Customer Service
Medical Careers in Skills Center	NAC – Certified Nurse Assistant, HIPPA, First Aid/CPR
Microsoft Office Specialist	MOS Core; MOS Expert
NAF Academies	Nationally Recognized End of Course Exams
Project Lead the Way	Nationally Recognized End of Course Exams
Precision Testing	Industry recognized assessment for most CTE courses

The following sections detail each of our main strategies for bolstering career and technical education in Seattle Public Schools for the remainder of the 2017-18 and projected 2018-19 school years. They each begin with a statement on the problem we are trying to solve with pursuing this strategy and implementing the proposed initiatives. In addition, each section tries to define the metrics by which we will determine whether we are successful in implementing this strategy and whether the initiatives and programs are helpful in realizing this strategy.

## Plans for Improving Design and Delivery of CTE Programs

### Strategy 1: Evaluate CTE program offerings to provide viable career pathways for future and current workforce demands.

In last year’s report, we committed to better using workforce data tools to inform our CTE program development, to revitalize our General Advisory Council, and to better inform school-based decision-making on CTE programs as three ways to provide more viable career pathways via CTE courses for our students. The following summarizes the progress we have made in these areas and the new initiatives we are proposing to start in 2018-19 and continue to invest over the next five years.

Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
<ul style="list-style-type: none"> <li>• Evaluation of current programs and pathways</li> <li>• Development of Health Services Pathway including High School+3 initiative</li> <li>• Leveraging of budget arenas to promote strategic investments in pathways in our high schools</li> </ul>	<ul style="list-style-type: none"> <li>• Development of a certain number of pathway programs per high school</li> <li>• Development of Informational Tech Pathway including High School+3 initiative</li> <li>• Building of MS programs to collaborate with neighboring HS program offerings</li> <li>• Collaboration with MS to offer students more CTE exploratory courses</li> <li>• Expansion of MS CTE offerings to all schools</li> </ul>

The problem we are trying to address is ensuring that students are enrolling in CTE programs that are part of a clear, articulated pathway that leads to post-secondary success and viable careers. The current access to viable CTE programs is inequitable across grades levels, schools, and regions of the city. The measurement for success of this strategy means increased student enrollment in CTE high school and Skills Center programs aligned to viable postsecondary and career pathways and equitable access points for all students to these programs.

***We have used existing data to better understand the current pathways we serve. We completed the most recent analysis in February 2018 and we will continue to review this data at least two times per year.***

Historically, Seattle has organized its Career and Technical Education (CTE)<sup>2</sup> programming by [5 career pathways](#) and [16 nationally-recognized career clusters](#). In this first step in the gap analysis, the data was organized by [CIP code](#) (classification of instructional programs) and sorted by 9 career-connected groupings to compare enrollment by high school and region.<sup>3</sup>

A quick review of the data indicates that while high schools in Seattle (with the exception of the Center School) offer a fairly wide variety of the career coursework, some are teaching more career-connected coursework than others.<sup>4</sup> Health Services are relatively weak district-wide, despite being a high-demand career and no health sciences are offered at all in the Northwest region. Please see Appendix C for the charts displaying this information.

<sup>2</sup> SPS is currently working on rebranding its CTE programs as Career-Connected Learning.

<sup>3</sup> The 9 groupings were recently determined by SPS CTE leaders in mid-January 2018.

<sup>4</sup> See also *High School Career-Connected Programs* map, Appendix 1.

There is overall higher enrollment in Engineering & Manufacturing coursework in the district, followed in descending order by Media Arts, Information Technology, Human Services, Business & Marketing, Culinary & Hospitality, Health Science, and Agriculture.

A next step will be to build career-connected programs in SPS based on local and regional workforce demand data. (A number of tools have been developed by [Washington STEM](#), the [University of Washington](#), the [Workforce Development Council of Seattle – King County](#) and many others.) Once such tool is featured in Table 6.

Several workforce development groups have expressed interest in supporting career-connected learning in Seattle. They could prove invaluable community partners, providing mentors, internships and apprenticeship programs. Interested groups include the Port of Seattle, the Workforce Development Group of King County, the Seattle Metropolitan Chamber of Commerce, the Seattle Regional Partnership, Washington STEM, Partnership for Learning, Washington Roundtable, Challenge Seattle, and many more.

### ***Seattle Career-Connected Learning Pathway Analysis by Region***

With access and transportation issues in mind, it also makes sense to analyze career-connected learning opportunities by region and build programming based on assets in the surrounding community.<sup>5</sup>

#### ***Northwest Region***

With 1931 students, Ballard High School is the largest school in the District, serving 559 more students than Ingraham. That size differential undoubtedly accounts for the fact that Ballard enrolls almost twice the number of career-connected students than its regional counterpart, Ingraham. Other factors may include the fact that Ballard offers several signature and specialty programs including: the Academy of Finance [NAF](#), a biotechnology academy, a digital filmmaking pathway, a maritime academy, engineering coursework (Project Lead the Way), photography, marketing and woodworking.

Ingraham High School on the other hand, with 1872 students, serves a smaller percentage per capita in career-connected coursework. It offers the International Baccalaureate Diploma Programme, Culinary Arts, a *Microsoft IT Academy*, as well as human development, web design, materials science and automotive technology programs.

The Center School, designated an “Options” school, is open to pupils throughout the District and serves 241 students. Located in Seattle Center’s Armory, it offers career-connected coursework within only one area—media arts. (Note also that the Academy of Interactive Entertainment offers digital game design programs in animation and programming in the same building under the auspices of the Skills Center.)

#### ***Northeast Region***

Roosevelt High School, with a total enrollment of 1872, serves 661 more students than Nathan Hale. While that partially accounts for its comparatively stronger career course participation, other reasons may include signature program offerings in programs in theater tech, media arts, web design, computer science, Independent Living, Apparel & Textiles, AP Psychology, Nutrition & Wellness, human

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<sup>5</sup> Seattle Public Schools recently categorized its schools by five regions: Northwest, Northeast, Central, Southeast and West

development, marketing, culinary arts and engineering (Project Lead the Way).

Nathan Hale High School's 1211 student population benefits from strong human services and media arts departments. In addition, its signature programs include KNHC Radio Station (C89.5), a digital filmmaking pathway, computer science and environmental horticulture.

### ***Central Region***

For the most part, the total enrollment difference between Garfield High School and Franklin accounts for the difference in their career-connected enrollment.

At 1842 students, Garfield is the third largest high school in the District, yet it has proportionately fewer students enrolled in career coursework than Roosevelt and Ballard. At the same time, it offers classes in 8 of the District's 9 groupings, its signature programs include media arts, sports medicine, business and marketing programs, as well as a science magnet program that includes engineering (Project Lead the Way).

Franklin High School, which serves 1286 students, is home to several academies, including the Academy of Finance ([NAF](#)), an Arts and Humanities Academy (which hosts a digital filmmaking pathway), the CREATE Academy (which provides construction-related engineering, architectural, and technical experience including Project Lead the Way) and the John Stanford Public Service Academy. In addition, Franklin will host a grant-driven Media Arts program, recently funded by the Paul Allen Family Foundation, that will be operated by the Skills Center beginning in the 2018-19 school year.

### ***Southeast Region***

At 864 students, Cleveland STEM High School is relatively small compared to other high schools in the District, yet boasts a higher percentage of career-connected enrollment per capita than any other high school.

It is comprised of two academies. The School of Life Sciences (SOLS) supported by [New Tech](#), offers biomed coursework. The School of Engineering & Design (SOED) supported by [New Tech](#), offers engineering (Project Lead the Way).

An Options school, Cleveland is open to any student within the District.

Its counterpart in the Southeast region is Rainier Beach High School. The smallest comprehensive high school in the District, it serves 734 students. Human services, followed by business, marketing and media arts are its strongest career-connected programs.

Rainier Beach also offers International Baccalaureate coursework and hosts five Skills Center programs—more than any other school in the District, which may account for its relatively small career-connected enrollment.

### ***West Region***

Chief Sealth International High School, at 1055 students, hosts an Academy of Finance ([NAF](#)), an

Academy of Hospitality and Tourism ([NAF](#)), a *Microsoft IT Academy*, and IB Sports Medicine. The majority of enrollment in Worksite Learning Opportunities can be found at Sealth, as it offers 57 semester-long internships this year.

West Seattle High School, enrollment 1032, offers a range of career-connected learning opportunities including automotive tech, woodworking, culinary arts, and media arts. It also hosts the Skills Center nursing assistant program.

***In response to this data, we are looking to viable career pathways for future and current workforce demands through initiatives that promote depth in particular pathways and breadth across CTE offerings.***

***Depth in Pathways - There are a number of specific ideas for promoting students engaging deeply in particular career pathways. We plan to begin development and piloting of these ideas in 2018-19 and take 2019-20 and 2020-21 to make them available district-wide.***

First, we want to more clearly articulate the most important factors to consider when determining what pathways we want to build out in each area of the city (e.g., connect to a living wage, have a low barrier to entry, instill “a love of the craft”, develop soft skills/21stCentury skills and connect to the EMSI database on key skills and competencies for all professions, have clear on-ramps and exits to maintain options for students) to ensure they have the necessary depth. To do this work, we may want to build off of the Denver Career Connect model by borrowing from their “Traits of a Young Professional” which grounds their career-connected learning work in the goal of building students’ perseverance, professionalism, communication, self-direction, collaboration across all of their programs.

More specifically, building off the Tech Prep program, the district is working with the leadership at Seattle Colleges to launch a long-term plan to build a pathway in particular career areas that enable students to earn a year of college level credit in high school that will then tee them up for particular career-oriented programs at Seattle Colleges. We are calling this the “High School+3” initiative. The goal would be to develop a coherent, well communicated sequence of courses in particular CTE pathways that link to stackable certificates, internship placements, and specific Seattle College programs. In addition, this initiative could be further enhanced by Mayor Durkan’s Seattle Promise offering many families the opportunity to have full funding for 3 years of their students’ postsecondary education.

**We are investing in the development of specific pathways building off of exemplary models (e.g., NAF Academy) and using “navigators” to build out these specific pathways.** For example, we are starting to build out the Health Services Pathway as a model for how to develop robust pathways that lead students to postsecondary success and career preparation in fields with high-wage, long-term employment opportunities. Despite unprecedented economic growth, employers in King County are struggling to fill thousands of middle-wage jobs while many residents are out of work. Underemployment is also a growing concern for a region that has seen a rapid decline in its middle class over the past few decades. Skills Centers and Career and Technical Education (CTE) programs throughout the region aim to bridge this gap between workforce supply and demand, connecting students to in-demand jobs by providing hands-on professional training at no extra cost. However, enrollments in the Seattle Skills Center are among the lowest in the state: only 1.1% of 11<sup>th</sup> and 12<sup>th</sup> graders in Seattle Public Schools (SPS) are participating in Skills Center programs. Enrollments in the Skills Center’s Health Sciences/Medical Assisting and Administrative Medical Office Assistant programs are particularly low, with only 10 students enrolled for the current school year. This number is especially

concerning given the high demand for healthcare services that will only continue to grow alongside the region's aging population.

The Seattle Region Partnership (SRP) and a team of partners plans to work with the district to revamp the Seattle Skills Center's curriculum and enhance the program's outreach efforts to students and parents, as a means of aligning programming to employer needs and increasing awareness of the Skills Center's offerings. This new curriculum will be developed in partnership with Seattle Public Schools (SPS) and Seattle Colleges to provide a mechanism through which students can work towards meeting high school graduation requirements while simultaneously earning college credit. The program will also actively engage prominent regional employers in order to foster collaboration between workforce supply and demand. This project is also in line with other regional efforts, such as the Regional Workforce Strategy Group and the Career Connect WA initiative.

This effort to enhance the Seattle Skills Center's curriculum is meant to help SPS prepare and plan for broader CCL expansion efforts as part of the Career Connect WA initiative. Activities in Year 1 will serve to catalyze the curriculum development process by jumpstarting key partnerships and elevating our capacity to engage stakeholders. Year 2 will serve to accelerate development and implementation processes and introduce a second high-demand industry of focus, such as Informational Technology. Our goal is for these processes to eventually become embedded into the workings of these partner institutions.

The new Skills Center curriculum will enhance students' opportunities to gain skills that are directly applicable to high-demand jobs, while also serving to cultivate a strong talent pool in King County. By incorporating market data and insights from prominent regional employers, this curriculum will help bridge the gap between workforce supply and demand, offering students invaluable "real-world" experience while also serving to fill talent gaps that employers face. Students attend Skills Center courses every day, 2.5 hours per day for up to two years. Skills Center students gain relevant skills and knowledge and earn industry-recognized certificates (IRCs). Some students will use these certificates and skills to gain employment immediately after high school, while others continue on to post-secondary programs to earn advanced certification, AA degrees, bachelor's degrees, or continue on to graduate school.

In addition to driving the curriculum development process, the project lead will also work with Seattle Public Schools and Seattle Colleges to develop articulation agreements so that students have the option to earn both high school and college credits while participating Skills Center programs. This opportunity will give students a head start in their post-secondary education, offering an accelerated pathway through college that will help ease high tuition costs for low-income students.

***Breadth Across Pathways – We want to develop a plan for providing equitable access to CTE across career pathways and across the regions of the city.*** There is a great deal of interest in ensuring that all students are provided an opportunity to explore a range of career pathways during their K-12 careers. As a first step, CTE team members joined the "Budget Arena" conversations with principals planning the 2018-19 school year to help them make strategic decisions on which programs to provide. During the 2018-19 school year, we will also develop a long-term plan for ensuring that comprehensive high schools across the city are in a position to provide up to at least five career pathways to all of their students. This will be coupled with an analysis of how to leverage capital investments in our high schools to ensure long-term support for a broad range of CTE programs. We have begun developing this analysis as part of the facilities planning related to the potential Building Excellence V Capital Levy.

**Strategy 2: Increase rigor through industry-recognized credentials, dual credit, and cross-credit opportunities.**

In last year’s report, we committed to finding ways to increase rigor in our CTE program through industry-recognized credentials, dual credit, and cross-credit opportunities. The following summarizes the progress we have made in these areas and the new initiatives we are proposing to start in 2018-19.

Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
<ul style="list-style-type: none"> <li>• Development of common criteria</li> <li>• Refinement of approach to cross-crediting</li> <li>• Increase in access for students to Dual Credit through Seattle Colleges</li> <li>• Increase in teacher support/training for Dual Credit</li> </ul>	<ul style="list-style-type: none"> <li>• Formal evaluation of all programs based on this analysis</li> <li>• Articulation of dual credit opportunities for students to other colleges</li> </ul>

***Dual credit: We continue to work to expand college credit in high school CTE courses.***

Dual credit is earning college credit while in high school classes. Through a Tech Prep articulation agreement with Seattle Colleges, students can earn transfer credit that can be used if students enter Seattle Colleges any time after graduating high school. During the 2016-17 school year 783 CTE students earned a total of 4459 college credits.

**TECH PREP DATA 2011-2015**

YEAR	TRANSCRIBED STUDENTS
2012-13	857
2013-14	890
2014-15	1164
2015-16	1214
2016-17	783

***Cross-credits: We continue to offer additional academic credit provided by CTE courses.***

Cross-credit is earning an academic credit that meets two subject-specific graduation requirements. Multiple CTE courses are cross-credited to other academic subject areas. See the table below.

**NUMBER OF CTE CROSS-CREDITED COURSES, BY SUBJECT AREA**

	Number of Cross-Credited Courses Available in the SPS	Number of Cross-Credited Courses Provided in 2015-16
<b>Total CTE cross-credited courses</b>	113	80
<b>Fine Arts</b>	25	20
<b>Math</b>	30	19
<b>Science</b>	45	30
<b>Social Studies</b>	12	9

<b>World Languages</b>	4	2
<b>Health</b>	2	2
<b>Language Arts</b>	1	0

***Going forward, we will increase rigor through industry-recognized credentials, dual credit, and cross-credit opportunities by conducting program evaluation of existing programs*** using the following criteria: teacher effectiveness, quality of curriculum and framework, breadth of courses in a pathway, student leadership, extended learning opportunities, linked to job data about being a viable career, the opportunity is present for Work-site experience, and the development of specific “soft skills”. Specifically, we are working with district content specialists in the arts to make cross credit opportunities more equitable while also assuring the rigorous course content.

In addition, program reapproval and Carl Perkins funding mandates all CTE programs to undergo program evaluations annually. SPS CTE utilizes its GAC and pathway advisories to evaluate these programs and provide industry related recommendations. Each SPS CTE pathway uses a different metric for evaluation, resulting in a varied end of the year program review completed by the individual teacher which is shared with the building principal and CTE. Each school is required to present to the program advisory for recommendation every two years. The General Advisory Council will be tasked with recommending an evaluation process that will be implemented across all CTE programs, approving an updated process to include stakeholders to provide feedback to support the evaluation process. The following minimum criteria is evaluated, but not limited to:

- Teacher Credentials
- Curriculum
- Industry approved Frameworks
- Pathway trajectory (Exploratory/Preparatory/Skills Center)
- Leadership equivalency activities are present and accessible to all students in program (DECA, FCCLA, HOSA, FBLA, CTSO)
- Workforce labor data outlook for viable careers
- Opportunity is present for worksite experience
- Postsecondary opportunity

**Strategy 3: Expand internships and Work-site learning opportunities.**

In last year’s report, we committed to providing more technical assistance and administrative support for schools to individually coordinate and sustain increased internship and Work-site learning opportunities and career connected learning experiences. The following summarizes the progress we have made and the new initiatives we will start in 2017-18 to improve our work in the areas related to Strategy 3.

Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
<ul style="list-style-type: none"> <li>Hiring of Career-Connected Learning Coordinators for all high schools</li> <li>Development of Work-Site Learning Employability Bootcamp for students</li> </ul>	<ul style="list-style-type: none"> <li>Attainment of specific target goals for internships, apprenticeships, and enrollment in Career Choices classes</li> </ul>

***We will add certificated Career Connected Learning Coordinators to all high schools and providing Career Choices classes at all high schools so that 9<sup>th</sup> and 10<sup>th</sup> graders are oriented to the options.***

Seattle Public Schools is interested in expanding its support for career-connected learning, encouraging students to explore and prepare for future careers throughout their K-12 experience. The theory of action is that if students have access to rigorous, relevant, authentic learning in career-connected courses, then they will more effectively navigate high school and post-high school opportunities including living wage jobs and post-secondary education options leading to viable careers. Access to advanced career connected learning experiences depends typically on school-level support for developing and managing work-based internships with local employers and organizations. Grant-funded work-site learning monitors in schools helped coordinate up to 2000 work-based internships in the 1990s in the district and we want to support and expand that level of support. Specifically, there are a number of projected benefits for adding these staff members including the following:

- Significantly increase the amount of direct support for all students in career-connected learning. This will result in a large increase in work-based internships, career connected activities and general counsel on career options.
- Provide direct support in each school for all students for career-connected learning.
- Support the work of counselors who currently have caseloads approaching 500/1.
- Expand credit bearing opportunities for students in Career Choices (exploration) or Worksite Learning Credit through Internship (11-12 grade)
- Provide equitable access to this support at all high schools.
- Leverage Naviance to explore the High School & Beyond Planning lessons in Advisory.

The following provides an outline of how these Career-Connected Learning Coordinators could develop a four-year plan for their schools:

**Work-Site Learning/Advisory Model  
4-Year Plan (Use of Advisory for Career Centered Learning)**

	Unit/Standards			
Freshman (Career Essentials I)	Assessing Career Interests	WBL Field Experiences- Pathway explosion (specialist)	Financial Literacy	Technology Integration
	Personal Leadership Development			

Sophomore (Career Essentials II)	Health and Safety (labor/industries)	Employment Laws- Understanding rights (State/national)	Financial Literacy	WBL activities— Panels, non-trad FT
Junior (Career Choices)	Career Portfolio- Resume, cover letter	Professionalism- Employability skills	Job Shadow (1-5 days) Worksite Learning Orientation	Post Secondary— Outreach activities
Senior (Students would complete units through Advisory covered in Sept/Feb)	Interviewing Skills/Mock Interview (career fair style)	Post High School Planning (Self-directed Module)	Personal Finance (Self-Paced Module/Through CTE pathway)	Internship/180 paid/non-paid Internship

***We will work with external partners to expand work-site learning opportunities.***

Seattle supports a vibrant and diverse economy, with opportunities for students to explore a variety of careers. The Port of Seattle and the City of Seattle have recently launched initiatives to provide internships and other career connected learning experiences for students. SPS has a strong history of supporting academic credit-bearing internships through the CTE Work-site Learning (WSL) model. However, the typical number of internships with employers, managed through the central office CTE Department, has been only about 45-60 per year. The central office CTE Department has prioritized expanding these opportunities by formally partnering with new organizations, such as the Port of Seattle, and by reorganizing SPS staff roles to improve capacity. The anticipated number of internships for 2017 exceeded targets in this first year of having this goal, with over 225 internships, many of these credit-bearing. In the 2017-18 school year, the CTE Department will focus to target internships to connect more meaningfully to a career pathway. During the 2018 summer, students will have opportunities to apply for internships in computer science, media arts, hospitality, finance, and manufacturing. This focused effort will increase access to credit bearing experiences. There are more details on how we will expand these partnerships in Strategy 6.

**Strategy 4: Improve facilities and viability of the Seattle Skills Center**

In last year’s report, we committed to improving the viability of the Skills Center. The following summarizes the progress we have made in these areas, the new initiatives we are proposing to start in 2018-19, and the longer term plans are developing to support this component of the district’s CTE program.

Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
<ul style="list-style-type: none"> <li>• Support for existing program. Application of this plan’s strategies to the Skills Center program</li> <li>• Attainment of increase in Industry Recognized certificates and earning of dual credits through Seattle College partnerships.</li> <li>• Increase in internship and Career Connected Learning experiences for students</li> </ul>	<ul style="list-style-type: none"> <li>• Development and implementation of long-term plan for Skills Center</li> </ul>

Presently, the Seattle Skills Center is the only single-district Skills Center site in Washington State. Given its unique program and different funding model, it was not included in the high school career-connected (CTE) data set. Throughout the state, Skills Center courses serve multiple purposes: 1) as a certificate-earning capstone experience for specific CTE pathways, 2) as an opportunity to help students continue to focus their college and career goals, and 3) to help students gain relevant skills and knowledge that can result in higher wages and increased likelihood of employment, whether they attend a four-year university, a certificate program, or go straight into employment following high school. In Washington State, all Skills Centers offer credit earning, advanced, “preparatory” CTE courses from 16 to 20-year old students during the school year, and introductory, or “exploratory”, credit-earning courses in the summer. School year courses are normally 2.5 hours per day, every day, and summer courses are usually 4.5 hours per day for the month of July.

In the district’s current distributed model of the Skills Center, we serve 156 students in 11 programs (7 half-day, and 4 full day) at six sites across the District during the school year. Five of the Skills Center programs are offered at Rainier Beach High School, Seattle’s southernmost high school, however, of these five courses, two of these were not run this year due to low enrollment. We have received consistent and widespread feedback that the SPS Skills Center distributed model presents logistical problems for our students and families. This feedback has come in two primary forms: a 2016-2017 school survey and direct comments from students, parents/guardians, counselors, and principals. Responses from the 2016-17 school year referenced the logistical challenges of having to get from one end of the city to another for courses, with comments like, “Locations hard to get to,” and “It is far away,” and “...too far away from our house.” Some parents and counselors have stated that they would not be signing up students due to the distance traveled each day to programs in the Southwest and Southeast regions of the district. Even with transportation provided (buses and taxis), several families have said they don’t want their students spending this much time commuting.

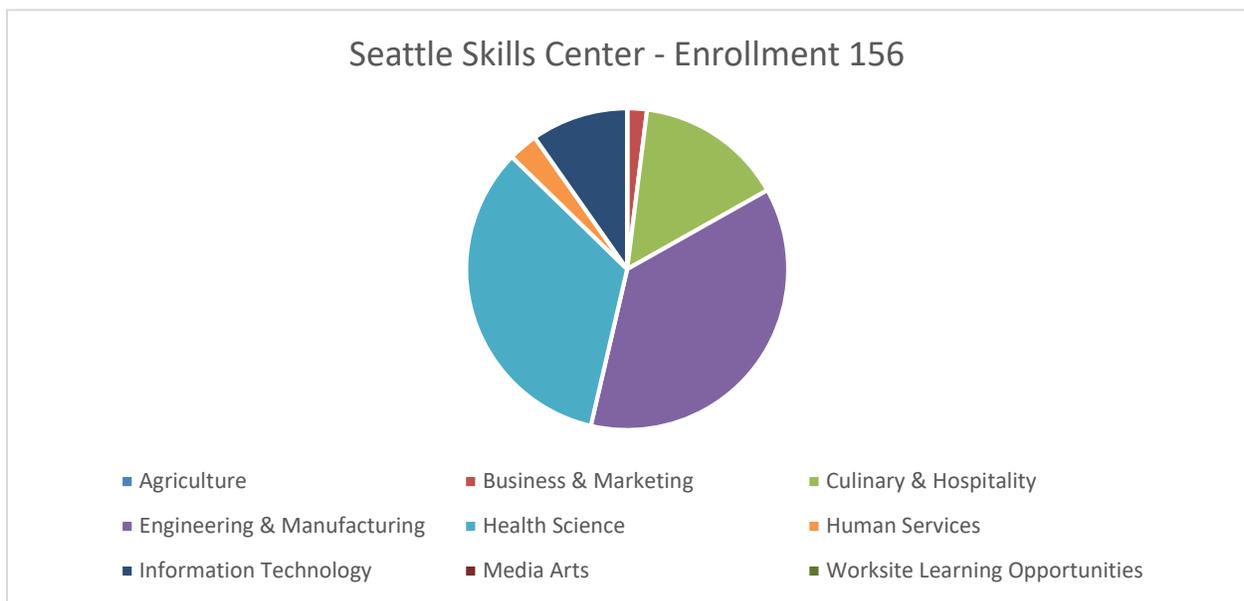
Because of SPS’s distributed model, access to Skills Center courses for all students across the district is not equitable. Placing a majority of Skills Center courses in a more central location would address this equity issue and therefore should be given serious consideration. Transportation and access to a central location should take into consideration pedestrian and bicycle access, new and planned mass transit routes, and proximity to highway 99 and I-5. Additionally, co-locating Skills Center courses with a centrally located high school would carry several benefits:

1. Maximize opportunities for students at co-located school;

2. Create more equitable access to preparatory CTE courses at the Skills Center for students from around the district;
3. Create synergy between exploratory courses in the host school and more advanced preparatory Skills Center courses open to students from all high schools;
4. Maximize use of space, as classrooms outfitted for technical, career-connected learning classes could be shared between introductory and advanced classes;
5. Increase opportunities for staff to collaborate and experience shared professional development, for example, professional learning communities;
6. Foster a sense of community and camaraderie among Skills Center students;
7. Develop opportunities to collaborate on authentic problem- and project-based learning experiences that serve the community and utilize skills students have developed in different pathways. For example, construct a tiny house for a homeless village with an innovative heating system designed and manufactured by students;
8. More cost-efficient and effective transportation for students to and from a central hub.
9. Allow resource and equipment sharing; and
10. Increased support from the principal and other Skills Center staff to be more readily available to teachers and students.

While it would benefit our students and families to have access to Skills Center courses centrally located, some courses would need to remain at satellite locations that match the technical facilities in those areas. For example, Maritime Vessel Operations at Seattle Maritime Academy in Ballard, or Firefighting and EMS at a former Seattle Fire Department station house could remain at their current location. In addition, a select number of courses that have consistently high enrollment in their present location and a history of serving students in that attendance area could remain in that location, perhaps as a half-day course, while the second half of the day the course could be offered at a more central location (e.g., Aerospace Manufacturing at Rainier Beach HS).

As students and families become more familiar with Skills Center offerings and enrollment continues to increase, we may be able to offer additional satellite locations for courses that prepare students for high demand, high wage jobs (e.g., manufacturing, construction, information technology, or health care).



**Strategy 5: Improve central office program administration and support to schools**

In last year’s report, we committed to enhancing the efficiency and effectiveness of the district’s central CTE support. The following summarizes the new work we are proposing to start in 2018-19 and the longer term plans in this area.

Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
<ul style="list-style-type: none"> <li>• Hiring of staff to support the implementation of Strategies 1-7</li> <li>• Shift in work stream to better support new program development, personalized support for buildings</li> <li>• Year two focus on priority spending based on Needs Assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Updated CTE funding guidance within the district’s Weighted Student Funding Formula and Goal book</li> <li>• Support of new program development</li> <li>• Plan to support new hires to CTE</li> </ul>

***We continue to organize central staffing in a way that efficiently supports our overarching plan and strategies.*** In last year’s report, we committed to conducting a reorganization of the central office CTE team to improve efficiency and quality of service and to shift more resources to schools where possible and appropriate. This focus was two-fold, to evaluate and update the efficiency of current systems and workstreams. Additionally, there was a focus was to create more seamless communication between the CTE district office and the school building administration. Specialist roles were regionally distributed to provide more personalized support specific to a building needs. In 2018-19, we will continue to re-organize the CTE team to ensure that work will continue a regional focus, be strategically aligned, and be connected to specific measures of success to ensure our investments are yielding results. As a part of this transition, specialist positions will transition to a generalist role to continue to support this regional focus, and content teacher leaders will be assigned from program areas to support specific content needs of teachers for PLC work. Please see Appendix A for more details on the projected changes to CTE staffing for 2018-19.

We continue to explore approaches to Budgeting that will ensure sustainable support of our most important initiatives and programs. The CTE department supports programs by allocating a classroom budget to each CTE teacher. As was noted in last year’s report, these budgets have typically been set based on historical figures rolled forward year to year, with adjustments made based on enrollment-based funding. This approach causes more reactive spending on an individual classroom basis, rather than strategic planning and investing for the overall program. In 2016-17, the CTE Department began shifting towards a value-based budgeting process, through which facility, equipment, materials, and professional development needs are prioritized for the following year. This will increase transparency and stability and enable more strategic planning. As we move to an advisory-supported five-year planning cycle for programs, teachers and building administration will be evaluating program needs to include replacement of equipment, curriculum, career connected experiences, industry assessments, and leadership development. In early May of 2018, when enrollment evaluated, final budgets for the 2018-19 school year will be set based on the prioritization that is occurring in the spring of 2018. CTE has also refined our approach to conducting needs assessment so that the district’s support for school CTE programs is more proactive and equitable. Finally, we are working with the Budget Office to ensure that CTE funding is better coordinated and connected to the guidance in the SPS Gold book and Weighted Student Formula.

**Strategy 6: Expand Partnerships and Community Outreach**

In last year’s report, we committed to expanding partnerships. The following summarizes the progress we have made, the new initiatives we are proposing to start in 2018-19, and the longer-term plans in this area.

Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
Development and distribution of CTE Partnership Framework, including the process for CTE Franchises	Attainment of specific targets for developing partnerships, including CTE franchises

As noted in the Board’s CTE Partnership Resolution passed in November 2017, the “expansion of CTE education in this budget environment requires additional, investment and support through external partnerships until fully funded by the state. Additionally, successful and engaging CTE courses within the K-12 system should include connections outside the traditional scope of K-12 education, including post-secondary pathways, and industry collaboration”. Kisha Bird, the director of youth policy at the Center for Law and Social Policy, also recently reminded us about the important role of partnerships in CTE stating that “the role of schools is to be an effective partner with their workforce system”. In turn, workforce agencies should be communicating labor market data to school districts. “Too often, there is not a real connection.” She added that it’s also important for schools to increase counseling positions as these professionals can help identify job opportunities for students and work as liaisons with local businesses or organizations offering youth employment.” (Source: <https://www.educationdive.com/news/students-gain-workforce-skills-through-part-time-jobs/517994/>)

***To facilitate CCL/CTE partnerships with SPS and to ensure that organizations and employers interested in partnering with the district can easily understand how to get started, we have drafted the following partnership framework that designates levels of involvement.*** It will also ultimately spell out what the expectations are for the district staff and the potential partners at each level of engagement.

7 Levels of SPS CCL /CTE Partnerships	Description	Some Current Examples
1. Career Interest	For those organizations looking to start partnering with the district on CCL-related work in a small way, we have this first level that only entails short-term commitments. At this level, partners can sponsor guest speakers, field trips, career fair, or funding for another 1-day CCL activity. Through these experiences, students can get excited about STEM (science, tech, engineering, and math) and other fields, learn from a wide variety of professionals about their work and career pathways, learn about careers through hearing from and asking questions of professionals who visit the school/class.	TEALS volunteers in Computer Science, or City of Seattle SYEP+ program 5-week course in Career Essentials; Army Corp of Engineers, Hot Stove Society.
2. Career Support	At this level, organizations provide funding for scholarships and other CTE-related activity without getting directly involved in the program work.	Keybank college scholarships for Finance academy

		<p>TectStart from Facebook</p> <p>Seattle Academies Foundation, college scholarships, Seattle University College Ready Course</p>
3. Career Mentorship or Industry Challenge	<p>At this third level of partnership, companies and organizations can develop a high-impact relationship with a student interested in a career field by providing exposure to your industry to students taking classes in your career field and communicating with and learning from a professional about a career and pathway in a sector of interest. Students can also complete an advanced industry based design challenge in a sector of interest at this level.</p>	<p>Molly Moon Ice Cream</p> <p>SPS Nutrition</p> <p>Seattle Academies Foundation</p> <p>Tom Douglas Restaurants</p>
4. Career Internships & Pre-apprenticeships	<p>At this fourth level of partnership, companies and organizations take on more by setting up formal internships and pre-apprenticeships. These more in-depth experiences help students build their social capital and professional traits through extended interaction with a professional in a sector of interest. Young professionals become fully immersed in your industry, building their college and career portfolios while contributing to a particular company or organization. Through these experiences, students learn from a wide variety of professionals about their work and career pathways, experience working in a sector of interest workplace, and expand their social capital and practice professional skills networking with professionals. At the high end of this level, through an education and work-based program, students meet or exceed minimum qualifications for entry into apprenticeship programs (from <a href="#">LNI definition</a>)</p>	<p>Office of Economic Development</p> <p>Tom Douglas Restaurants</p> <p>Boys &amp; Girls Club – YouthForce</p> <p>Seattle Academies Foundation, Hospitality and Finance</p> <p>Youth Maritime Collaborative</p> <p>Port of Seattle</p> <p>Manufacturing Industrial Council</p>
5. Career Program	<p>For partners who want to co-design a CCL/CTE program, including co developing a curriculum and setting up internships, they can help develop a Career Program with the district.</p>	<p>Core Plus</p> <p>TEALS</p> <p>Foundry 10</p> <p>PLTW</p>

		NAF Academy WA Restaurant Association
6. Career Apprenticeship	Those partners who can meet the stringent requirements for providing SPS students with formal apprenticeships are encouraged to engage at this fifth level. To do so, partners need to provide 2000 hour onsite paid position with a learning component including an advanced mentoring process.	RPAC
7. Career Franchise	For partners interested in establishing brand new CTE programs that will become a core part of the district's portfolio of CTE programs, there is the highest level of partnership: Career Franchise. See below for details.	NAF Academy, Vulcan, The Port of Seattle, Quincy Jones

It should be noted that with each of these levels of partnership, we are committed to engaging with multiple key stakeholders including the Mayor's Office, the Chamber of Commerce, and key labor partners.

***At the most advanced level, we will expand partnerships and community outreach by developing CTE Franchise Options.***

Creating one new CTE course is like starting a small business. The district has to hire a teacher, either a certificated teacher or an industry practitioner. There needs to be rigorous and relevant curricula. Then we have to market the program and, nearly always, carry the program at a loss while we grow enrollment over time. We are currently working on three of these new programs in Media Arts, Recording Arts, and Maritime and each has struggled with low enrollment. Therefore, we are working to develop a franchise model showing: a) how much it costs to incubate a CTE "start-up" and offer some options to those who may be able to help with funding. These franchises will fit within a larger framework for engaging businesses and industry stakeholders in establishing CTE-based partnerships with the district per the Board's CTE Resolution from November 2017.

More specifically, an SPS CTE franchise would be a formal intermediary structure formed to sponsor career-connected learning sequences as a collaboration between the district and local pathway partners. The CTE franchise features shared funding, high impact design, applied delivery and replication of CTE courses that are aligned with labor market needs. The outcomes of these franchises will be assessed on increased student enrollment, integration of career learning with the core coursework, ability of student graduates to secure aligned jobs. A business, agency or institutional employer who serves as CTE franchise partner would participate in funding and co-creating a sequence of courses that connect 21<sup>st</sup> century skills with specific career skills. These franchise partners would be able to build their talent pool for potential employment of SPS students either upon high school graduation, completion of post-secondary training or post college. And they must establish themselves as a primary funding partner or a leader of a team of funders. The work of 2018-19 will be to establish common protocols (structures, conditions and operational essentials for current and projected CTE offerings) that will ultimately result in these sustainable CTE franchise.

**Strategy 7: Engage in recruitment and marketing to increase enrollment.**

In last year’s report, we committed to Improving outreach and partnership with families and students and noted that we needed to improve our communications on the great opportunities our CTE programs offer. This work is so important that we decided to add a seventh strategy on how we can more strategically and systematically improve our recruitment and marketing efforts to increase participation in CTE. The following summarizes the new initiatives we are proposing to start in 2018-19.

Planned Work for 2018-19	Projected Work for 2019-20 – 2023-24
<ul style="list-style-type: none"> <li>• Development of new recruiting and marketing campaign for the district’s career-connected learning plans</li> </ul>	<ul style="list-style-type: none"> <li>• Refinement of recruiting and marketing campaign for the district’s career-connected learning plans.</li> <li>• Development and distribution of long-term vision for career-connected learning</li> </ul>

***We will explore rebranding CTE as Career Connected Learning in all of our program communications and marketing materials.*** The feedback from various stakeholders, particularly members of the General Advisory Council, has been clear: there is great, widespread interest in Seattle to have students engage in more career exploration and preparation but too many people perceive CTE programs as something that is only for students who have limited postsecondary options and are not slated to earn a four-year degree. To reframe this work as something that can help all students, we will begin to transition our communications and marketing materials to refer to this work as “Career Connected Learning”. Given that the state and federal government refer to this work using the CTE label, we will proceed cautiously with this rebranding effort to ensure we do not jeopardize the support for particular programs.

***We will improve marketing and branding by rebranding career exploration and preparation activities in Seattle, leveraging community engagement activities to share a new vision for the role of career-connected learning, leveraging existing media to share the new vision for career-connected learning, and having SPS students help develop promotional materials on career-connected learning in Seattle.*** Ultimately, through a marketing and branding campaign for Career and Technical Education, we want to invest the larger community in an exciting vision for what career connected learning could be for Seattle Public Schools. The following is a summary of the first draft of this vision. If students gain exposure to, and knowledge about, career pathways beginning in elementary school and continuing with classes in middle school, and build skills through dual (high school and college) credit classes and internships through high school, some students will complete enough college credit in career focused coursework to earn a Bachelor of Science degree in partner colleges in only three years after high school graduation. Students will have options along the way to focus on everything from getting a career-focused job immediately after graduating high school, gaining some additional post-secondary training, or continuing on to college and possibly graduate school in their chosen field. Partnership with the Seattle Colleges for dual credit will initially focus on Health Science, Information Technology, and Manufacturing career clusters.

**Draft Vision of K-12 Career-Connected Learning Continuum:**

**Elementary:**

- 4<sup>th</sup> and 5<sup>th</sup> grade students:
  - o Introduction to a range of career pathways through field trips, guest speakers, and hands-on activities (example, Living Computer Museum, Boeing, Port of Seattle, Swedish Medical center)

- Middle School:
  - o 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> graders participate in field trips, hand-on activities, and meet and hear from people who work in a range of industries.
- Summer between 8<sup>th</sup> grade to 9<sup>th</sup> grade:
  - o Students take a summer Skills Center course for a .5 HS CTE credit. Focus is on learning high school study skills, employability skills, working on their High School and Beyond plan, and identifying other CTE or Skills Center courses they might be interested in.
- 9<sup>th</sup> Grade:
  - o Students take a CTE and/or STEM-focused course that is related to a possible career pathway of their interest and participate in field trips, hand-on activities, and meet and hear from people who work in a range of industries. Ideally, students also take a Career Essentials class.
- Summer between 9<sup>th</sup> and 10<sup>th</sup> grade:
  - o Students take a summer Skills Center course for a .5 HS CTE credit. Focus is on learning high school study skills, employability skills, working on their High School and Beyond plan, and identifying other CTE or Skills Center courses they might be interested in.
- 10<sup>th</sup> Grade:
  - o Students take a CTE and/or STEM-focused course that is related to a possible career pathway of their interest, and participate in field trips, hand-on activities, and meet and hear from people who work in a range of industries. Students consider a Skills Center course they may want to take during 11<sup>th</sup> grade.
- Summer between 10<sup>th</sup> and 11<sup>th</sup> grade:
  - o Students take a summer Skills Center course for a .5 HS CTE credit. Focus is on learning high school study skills, employability skills, working on their High School and Beyond plan, and identifying other CTE or Skills Center courses they might be interested in. Students participate in job shadows, site visits, and learn how internships work. Students consider a Skills Center course they may want to take.
- 11<sup>th</sup> Grade:
  - o Students take an advanced/preparatory CTE or Skills Center course.
  - o Students earn dual credit through Seattle Colleges for their coursework.
- Summer between 11<sup>th</sup> and 12<sup>th</sup> grade:
  - o Students have paid, high school and college credit earning, internship in a job closest to the career pathway of their choice.
- 12<sup>th</sup> Grade:
  - o Students take an advanced CTE or Skills Center course.
  - o Students earn dual credit through Seattle Colleges for their coursework.
- Summer after 12<sup>th</sup>
  - o Paid, dual credit internship.
- Year one, Seattle Colleges:
  - o Continue credit earning classes and internships towards a Bachelor of Science
- Year two, Seattle Colleges:
  - o Continue credit earning classes and internships towards a Bachelor of Science
- Year Three, Seattle Colleges
  - o Graduate from Seattle Colleges with a Bachelor of Science in one of the available fields.

In this way, we are following the example of Denver Public Schools in clearly illustrating the K-14 journey students should take in exploring and ultimately preparing for careers (example:

<http://www.dpscarerconnect.org/welcome/about-us/>)

**APPENDICES – 2017-18 CTE REPORT**

**Appendix A: Central CTE Staffing**

Central Office CTE Staff for 2017-18

**Administrators**

Director, Career and College Readiness ..... Caleb Perkins  
 CTE Program Manager .....Jane Hendrickson  
 Career Pathways and Internship Coordinator ..... Vacant

**Support Staff**

Fiscal Analyst.....Wendy Durham  
 Administrative Assistant .....Robyn Redfield  
 Office Specialist..... Hilary Gray

**Certificated Specialists**

Academies and Work-Based Learning ..... *Vacant*  
 Arts, Media, Science & Engineering..... Robert Austin  
 Business, Marketing, & Information Technology..... Maria Herrera-Lofton  
 Agriculture, Health & Human Services and Family & Consumer Science.....Susan Grant

**Skills Center**

Skills Center Principal..... Dan Golosman  
 Media Arts Project Manager ..... Kate Baker  
 Administrative Secretary/Registrar .....Jennifer Toth

Projected New or Reorganized CTE Staffing in 2018-19

Function/Workstream	SPS Staffing	Projected Roles
CTE Specialist #1	1.0 FTE	Regional based assignment – North
CTE Specialist #2	1.0 FTE	Regional based Assignment South
CTE Specialist #3	1.0 FTE	Preparatory Programs, Academies, Frameworks
CTE Specialist #4	1.0 FTE	STEM & Computer Science-work with CAI
Teacher Content Leaders	1.6 FTE	Assigned teacher will receive stipend or equivalent of a .2 to serve as content specialist for teacher support
CCL, Internships and WSL Coordinator—12 month	1.0 FTE	Oversight of CCL positions in high schools, develop industry partnerships, manage CCL outreach activities
Health Services Pathway Navigator/Consultant	Part-time (not funded by SPS)	Funding from JP Morgan Chase provided via Seattle Region Partnership
Media Arts Navigator	Part-time (not funded by SPS)	Funding through December, 2018 from Office of Economic Development
Dual Credit (Tech Prep) Navigator	Part-time (not funded by SPS)	Funding from City of Seattle, DEEL

## Appendix B: Career Clusters and Pathways

Each Career Cluster™ represents a distinct grouping of occupations and industries based on the knowledge and skills they require. The 16 Career Clusters™ and related Career Pathways provide an important organizing tool for schools to develop more effective programs of study (POS) and curriculum.

- **Agriculture, Food & Natural Resources**  
The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.  
Courses in SPS: Horticulture, Food Science, Nutrition and Wellness, Environmental Science, Bio Technology Academy
- **Architecture & Construction**  
Careers in designing, planning, managing, building and maintaining the built environment.  
Courses in SPS: Woods, C-West and opportunity for an ACE Mentor
- **Arts, A/V Technology & Communications**  
Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.  
Courses in SPS: Video, Radio, Multimedia, Graphic Design, Yearbook, Animation, Photography, Technical Theatre, Apparel and Textiles
- **Business Management & Administration**  
Careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.  
Courses in SPS: Introduction to Business, Project Management, IB Business Management, AP Economics
- **Education & Training**  
Planning, managing and providing education and training services, and related learning support services such as administration, teaching/training, administrative support, and professional support services.  
Courses in SPS: Careers in American Sign Language
- **Finance**  
Planning and related services for financial and investment planning, banking, insurance, and business financial management.  
Courses in SPS: Academy of Finance Program, Accounting
- **Government & Public Administration**  
Planning and executing government functions at the local, state, federal, and tribal levels, including governance, national security, foreign service, planning, revenue and taxation, and regulations.  
Courses in SPS: Family Career & Community Connections
- **Health Science**  
Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.  
Bio Medical, Medical Assisting, Medical Careers, Family Health, Sports Medicine, Nutrition and Wellness
- **Hospitality & Tourism**  
Preparing individuals for employment in career pathways that relate to families and human needs such as restaurant and food/beverage services, lodging, travel and tourism, recreation,

amusement and attractions.

Courses in SPS: Academy of Hospitality and Tourism Program, Culinary Arts, Culinary Foundations

- **Human Services**

Preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care, and consumer services.

Courses in SPS: IB Psychology, AP Psychology, Teen Grads Program, Human Development, Child Development, Culinary, Interpersonal Relationships, Skills Center Teaching Academy

- **Information Technology**

Building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.

Courses in SPS: Skills Center Info Tech Specialist/Computer Networking, Microsoft IT Academy, Computer Applications, Web Design, Computer Science, Phone Application Programming, AP Computer Science, UW in the High School Computer Science, Middle School Computer Science, Skills Center Animation & Game Programming

- **Law, Public Safety, Corrections & Security**

Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.

Courses in SPS: Skills Center Firefighting and EMS

- **Manufacturing**

Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.

Courses in SPS: Skills Center Aerospace, Auto, Construction Trades, Metals

- **Marketing**

Planning, managing, and performing marketing activities to reach organizational objectives such as brand management, professional sales, merchandising, marketing communications and market research.

Courses in SPS: Marketing 1-4, Store, Advertising

- **Science, Technology, Engineering & Mathematics**

Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Courses in SPS: PLTW Engineering, Applied Math, CAD, Computer Science, Aerospace Engineering, Marine Science, Financial Algebra

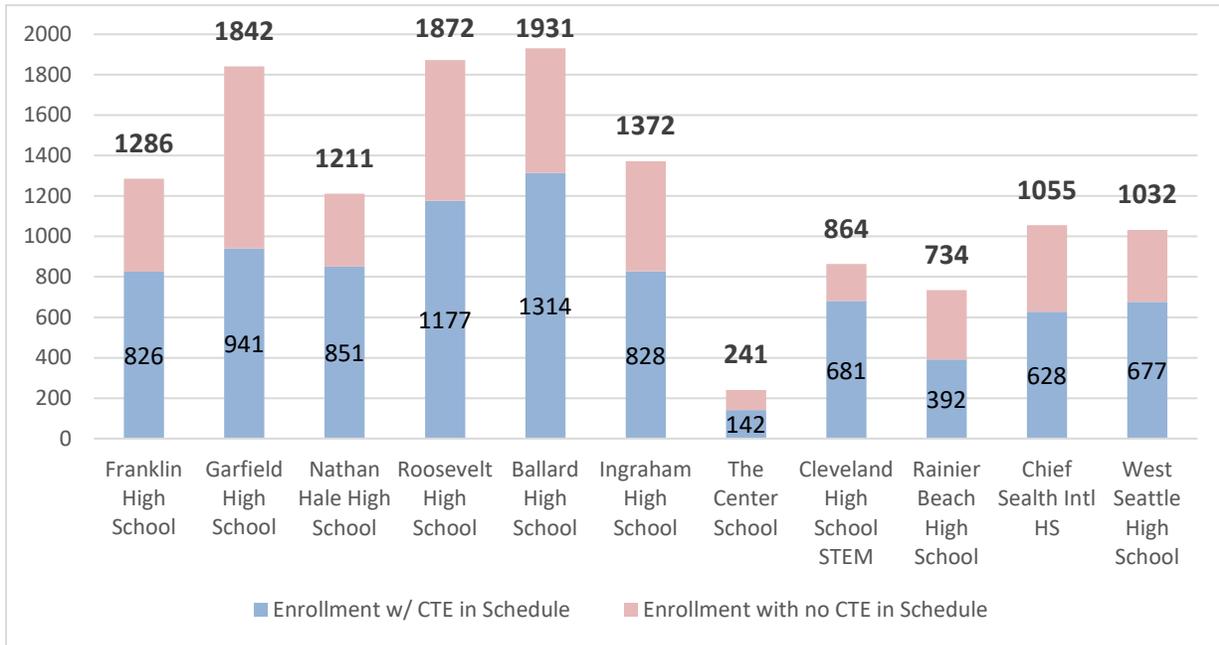
- **Transportation, Distribution & Logistics**

The planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Courses in SPS: Maritime Academy Program, Auto

**Appendix C: SPS Participation in CTE & Career Pathways**

**Table 2:**



**Table 3: Career-Connected Course Enrollment by High School and Career Groupings. (Please note that this chart controls for CTE participation relative to school size.)**

